

Wetlands Evaluation Report



State Road 87 Connector PD&E Study Limits: From the Intersection of SR 87S and US 90 to SR 87 N

<u>Financial Project ID #'s</u>	<u>Federal Aid Project #'s</u>
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Final Report:

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EXECUTIVE SUMMARY

The State Road (SR) 87 Connector Project Development and Environment (PD&E) project is comprised of approximately 8 miles stretching between the intersection of US 90/SR 87 south and the intersection of SR 89/SR 87 north. The alignments are located north of the City of Milton and south of Whiting Field and cross both the Blackwater River and Clear Creek. The project is needed to provide an alternate connection from SR 87 south to SR 87 north to facilitate emergency evacuation, ease traffic, and increase the overall Level of Service (LOS) of the existing alignment.

Based on Florida Land Use Forms Classification System (FLUCCS), the alignments are currently dominated by wetland forested mix (FLUCCS #6300), hardwood coniferous – mixed (FLUCCS #4340), coniferous plantation (FLUCCS #4410), and rangeland (FLUCCS #3100 & #3300). There are approximately 57 acres of wetlands within the Alternative 1 alignment and approximately 56 acres of wetlands within the Alternative 2 alignment. Approximately 35 acres of wetlands within alignment 1 and 31 acres of wetlands within alignment 2 are proposed for direct impact. Approximately 22 acres are potentially proposed for shading in both alignments 1 and 2 and there will be approximately 190 acres of indirect and cumulative wetland impacts. Wetland impacts have been avoided and minimized to the maximum extent practicable by bridging the high quality, sensitive wetlands associated with the Blackwater River, Clear Creek, and reticulated flatwoods salamander critical habitat.

Based on the preliminary Uniform Mitigation Assessment Methodology (UMAM) evaluation, alignment 1 will result in 53.25 units of functional loss and alignment 2 will result in 50.60 units of functional loss. Impacts can be mitigated at either the Pensacola Bay Mitigation Bank or at the Yellow River Ranch or Dutex sites. An Environmental Resource Permit (ERP) and Sovereign Submerged Lands (SSL) authorization will be required from the Florida Department of Environmental Protection (FDEP) and a Clean Water Act (CWA) Section 404 dredge and fill permit will be needed from the United States Army Corps of Engineers (USACOE).



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I. INTRODUCTION

A. General Purpose

The objective of the Project Development and Environment (PD&E) Study process is to provide the documentation necessary to determine the best route for the SR 87 Connector. The purpose of this new road is to provide a direct route for traffic on SR 87 in the south end of Santa Rosa County to access SR 87 north of Milton and to provide more direct access from I-10 to the Naval Air Station, Whiting Field. Factors under consideration include transportation needs, environmental issues, engineering, and cost. The process includes the preparation of a series of reports that document the research and analysis being conducted for these factors (Metric, 2011).

Generally, the PD&E process involves the following steps: (1) the establishment of project need; (2) the gathering and analysis of detailed information regarding the environmental features of the alignments; (3) the development of several alternatives for meeting the project need; and (4) the selection of a Preferred Alternative. During this process communication with the public is very important. This is accomplished through public meetings, interaction with various agencies, communication with elected officials, and meetings with local business owners (Metric, 2011).

B. General Project Description

SR 87 is the main north-south roadway in Santa Rosa County. SR 87 facilitates access between Navarre in the south to Milton and into Alabama. SR 87 is also a hurricane evacuation route for many. SR 87 is a designated hurricane evacuation route.

The existing roadway consists of rural and urban cross-sections, but generally is rural in nature. It passes over the Blackwater River through historic downtown Milton where it is a shared facility with US Highway 90 for 4.6 miles. Currently this facility is operating at a failing level of service (LOS F). The proposed SR 87 Connector will be a two-lane facility with right-of-way for a future four-lane divided facility.

C. Location

The alignments are located north of the City of Milton, Santa Rosa County, Florida and south of Whiting Field and cross both the Blackwater River and Clear Creek (Figure 1). Alignment 1 is approximately 7 miles long and Alignment 2 is approximately 8 miles long. Each alignment extends from US 90 north, crossing the Blackwater River, and then curves west towards SR 87N.



II. PURPOSE AND NEED

As described in the Alternatives Evaluation Report prepared by Metric Engineering and the PD&E study team (2011), the objective of the PD&E Study process is to provide the documentation necessary to determine the best route for the SR 87 Connector. The purpose of this new road is to provide a direct route for traffic on SR 87 in the south end of Santa Rosa County to access SR 87 in the north and to provide more direct access from I-10 to the Naval Air Station, Whiting Field. Factors under consideration include transportation needs, environmental issues, engineering, and cost. The process includes the preparation of a series of reports that document the research and analysis being conducted for these factors.

A. Emergency Evacuation

SR 87 serves as a vital evacuation route for northbound traffic destined for I-65 in Alabama. During times of hurricane force winds, both the Escambia Bay Bridge and the Garcon Point Bridge close leaving SR 87 north to the interstate and beyond as the only access out of the beach areas like Gulf Breeze and Navarre. SR 87 is also the only access into the area for Emergency First Responders; however, with a portion of the current alignment travelling along a congested portion of US 90, through historic downtown Milton, SR 87 cannot function as a contiguous roadway. The project will address future projected deficiencies on an established emergency hurricane evacuation route.

B. Multi-modalism

The project will also address the need for greater bicycle and sidewalk connectivity within the County with possible connections with the Blackwater Heritage Trail, enabling area residents' direct access. Unfortunately, Escambia County Area Transit does not provide service to this area of Santa Rosa County; however, in the future if such services were to be provided, the proposed facility would offer greater opportunities in regional network systems for transit. Finally, connection to the proposed Whiting Aviation Park will be considered. This park will be located on the east side of Whiting Field and will include a 6,000 foot runway currently under a joint use agreement with the Naval Base.

C. Social Demand and Economic Development

Santa Rosa County is not only a bedroom community to the greater Pensacola area, but in its own right, has also been experiencing considerable growth over the past year. This growth has spurred the need for an improved roadway network. In addition, major traffic generators in the area such as new residential developments, the Santa Rosa Criminal Justice Center, the Santa Rosa Corrections Facility, the Whiting Field U.S. Naval Air Station, the Team Santa Rosa Joint Planning area near Whiting Field, and the Santa Rosa Commerce Park in the US 90 corridor, would all benefit from the capacity this facility will provide. The need for the project is also related to committed trips associated with future development in the northern portions of Santa Rosa County, as



well as the future development in the US 90 corridor, which is hindered by the existing capacity limits of US 90.

D. Future Growth

Santa Rosa County has grown 173% since 1980 and is expected to grow another 92% by 2030. This increase will put further demand on the US 90/SR 87 segment, making growth and evacuation difficult due to a lack of roadway capacity. In Traffic Analysis Zones adjacent to the alignment, population is anticipated to grow by 2,648 from 2,029 to 4,677, or 131 percent, between 1997 and 2020. Employment is projected to increase by 575 from 908 to 1,483, or 63 percent. The number of dwelling units is forecasted to rise by 1,114 from 827 to 1,941, or 135 percent.

E. Traffic Data

According to the Santa Rosa County Comprehensive Plan, the current adopted Level of Service (LOS) standard for US 90 is D. In 2008, US 90 from Ward Basin Road to SR 87N had a failing level of service. Without the proposed improvement, the operating conditions will continue to deteriorate. The Raw Model Volume for the 2020 Needs Plan for this new segment is 9,472 vehicles per day. This would provide much needed relief to US 90.

F. Safety/Crash Rates

The information below contains crash data from the period of 2004 thru 2009 according to Florida Department of Transportation TSAT data base. On SR 87 south, from I-10 to US 90, between mile points 18.500 (I-10) and 19.769 (US 90), there were a total of 86 crashes, 47 of those were with injuries, and 39 with property damage only. The majority of the crashes in this segment occurred at the US 90/SR 87S intersection.

On US 90, from SR 87 south to SR 87 north, between mile points 11.610 and 16.202, there were a total of 234 crashes, 144 of those were with injuries, 1 fatality and 89 with property damage only. The majority of these crashes were distributed throughout the segment. There was, however, a slightly higher concentration of crashes at the US 90/SR 87N intersection. The single fatality in the segment occurred at milepost 13.847 just east of Ward Basin Road.

On SR 87N, from US 90 to Southridge Road, between mile points 0.004 and 11.362, there were a total of 166 crashes, 113 of those were with injuries, and 53 with property damage only. As with the segment along US 90, the majority of these crashes were distributed throughout the segment. There was, however, a slightly higher concentration of crashes at the US 90/SR 87N intersection.

The SR 87 Connector will include a new roadway to connect SR 87S and SR 87N. Presently, the SR 87 alignment follows along US 90, a congested roadway, for five miles. This portion of the alignment is operating at a LOS F and is the area where the only fatality in the alignment occurred. Improvements to the existing roadway in this vicinity



are difficult due to the historic downtown Milton area. By developing a new alignment that does not follow the existing US 90 alignment, the traveler would be able to avoid this high traffic area.

G. Plan Consistency

The proposed new facility is consistent with the Santa Rosa County Comprehensive Plan, and is also referenced in the County's Capital Improvements Schedule in Policy 4.1.E.3. The Comprehensive Plan design year for this facility is currently 2025, although as the project moves through the next study phase and a formal forecast traffic report is completed, the design year will change to allow for a standard twenty year forecast complying with Federal guidelines (Design Year 2035). Likewise, the proposed new facility is in the TIP and the STIP, as well as, in the Florida/Alabama TPO five-year work program.

III. WETLAND IDENTIFICATION, DELINEATION, AND DATA COLLECTION

A. Introduction

In accordance with Executive Order 11990, Protection of Wetlands, dated May 23, 1977, a wetland evaluation was conducted for the alternative alignments. The study alignments were evaluated relative to existing site conditions and possible impacts that would be associated with the road construction. Wetland identification was accomplished with aerial photographs, National Wetland Inventory (NWI) (U.S. Fish and Wildlife Service, 2010) maps, the Santa Rosa County soil survey, U.S. Geological Survey (USGS) topography maps, and onsite wetland delineation. Delineations followed the "Corps of Engineers Wetland Delineation Manual, Regional Supplement" (Army, 1987 & 2009), Chapter 62-340 of the Florida Administrative Code, and Part 2 Chapter 18 of the FDOT PD&E Manual (Wetlands and Other Surface Waters). Field investigations were conducted in September 2011, January 2012, and August 2012.

B. Methodology

ERC employed a three phase protocol to evaluate and delineate the extent and nature of wetlands in the proposed alignments. In phase 1, spatial data sources and other public sources of information were obtained and reviewed to develop a preliminary assessment of the physical and biological characteristics for the general area proposed for possible realignments. Several key references included *Florida Wetland Plants: An Identification Manual* (Tobe, et. Al., 1998), the *Soil Survey of Santa Rosa County, Florida* (USDA-NRCS, 1980), 7.5 minute Quadrangle Maps (U.S. Geological Survey), and the *Guide to Vascular Plants of the Florida Panhandle* (Clewell, 1985).

In phase 2, ERC conducted an analysis of historic and current maps and spatial data including a series of aerial photographs to more specifically characterize the ecological and physical characteristics of the land and surface waters for the areas proposed for possible realignments. ERC scientists with expertise in local ecosystems inspected the



areas proposed for the realignments and recorded soil, vegetative, and hydrological data. Information obtained from the initial site visits were combined with previous research to develop maps that depicted vegetative communities classified by the Florida Natural Areas Inventory (FNAI, 2009), land use classified by the Florida Land Use, Cover, and, Forms Classification System (FLUCCS) (North Florida Water Management District, 2007) and wetlands classified using the National Wetlands Inventory (NWI) (U.S Fish and Wildlife Service, 2010).

In phase 3, ERC selectively sampled representative polygons to verify, or ground-truth, the spatial data delineations of vegetative communities, land uses, and wetland types in the field. During the phase 3 field visits, ERC biologists delineated the regulated jurisdictional wetland habitats per State and Federal guidelines. These guidelines were consistent with the procedures specified in the Florida Administrative Code and the United States Army Corps of Engineers (USACOE) 1987 Wetland Delineation Manual and the 2009 regional supplement. ERC biologists marked the wetland boundaries in the field by placing numbered flags at closely spaced (between 5 and 30 feet depending on line of sight) intervals and recording each flag position using GPS. Maps depicting the location of each wetland flag were provided to surveyors for their use in obtaining exact positions of each wetland flag. All figures in this report depict the GPS located wetland flags and delineations, not the surveyed points. Final jurisdictional determinations will be made by State and Federal regulatory agencies.

C. Land Use

The existing land use within the alternative alignments was classified using FLUCCS. The dominant existing land use in both alignments was Wetlands Forested Mix, Hardwood Coniferous-Mixed, Coniferous Plantations, and Rangeland. The acreage and percent of existing land use cover by FLUCCS category is summarized in the following tables and depicted on Figure 7.

Table 1. Approximate FLUCCS Land Covers within Alternatives 1 and 2.

FLUCCS Code	FLUCCS Level 3 Descriptor	ACRES	ACRES
110	RESIDENTIAL, MEDIUM DENSITY <TWO-FIVE DWELLING UNITS PER ACRE>	0.0	1.4
120	RESIDENTIAL, MEDIUM DENSITY <TWO-FIVE DWELLING UNITS PER ACRE>	1.5	1.2
140	COMMERCIAL AND SERVICES	10.7	9.7
150	INDUSTRIAL	2.7	0.0
210	CROPLAND AND PASTURELAND	37.4	22.3
220	TREE CROPS	5.9	0.0
320	SHRUB AND BRUSHLAND	3.6	0.0
410	UPLAND CONIFEROUS FORESTS	217.1	251.1
420	UPLAND HARDWOOD FORESTS	3.6	3.6
434	HARDWOOD - CONIFEROUS MIXED	109.3	88.1
441	CONIFEROUS PLANTATIONS	51.0	108.6
443	FOREST REGENERATION AREAS	0.0	46.6



510	STREAMS AND WATERWAYS	6.7	6.7
610	WETLAND HARDWOOD FORESTS	14.4	12.5
630	WETLAND FORESTED MIXED	46.5	39.1
653	INTERMITTENT PONDS	4.6	4.6
631	WETLAND SHRUB	19.1	19.1
832	ELECTRICAL POWER TRANSMISSION LINES	55.8	55.8

The Future Land Use (Santa Rosa County, Florida, 2002) planned for this area is primarily agricultural mixed with industrial, single family residential, and conservation. The industrial future land use is located on the south side of alignments 1 and 2 at the intersection of SR 87 South and US 90 while the residential land use is located on the northern end of the alignments where they intersect with SR 87 North. The Future Land Use Map is included as Figure 9.

D. Soils

Soil Maps for the alignments using spatial data from the Soil Survey of Santa Rosa County, Florida (USDA, 1980) and are produced for this report as Figure 3. Selected points in delineations of the dominant soil survey map units were sampled using a bucket auger or soil probe to a depth sufficient to verify that the soil survey data was within the range of characteristics for the map unit or was a similar soil. Soils were also excavated to a depth of 12 inches or more using a tiling spade to classify the hydric soil status and characteristics of the upper soil profile. Photographs of these excavations and soil descriptions are in Appendix B.

Soils of the uplands are documented in Table 2. Table 2 also describes the depth to seasonal high water table and the approximate acreage of each non-hydric soil map unit in each alignment.

Table 2. Onsite Upland Soils Based on NRCS Soil Survey (Appendix B: Soil Photographs and Descriptions, Pages 1-5)

Soil #	Soil Name	Seasonal High Water Table	Alt.1 Acres	Alt.2 Acres
1	Albany Loamy Sand 0-5% Slopes	12-30"	17.7	17.7
5	Bonifay Loamy Sand 0-5% Slopes	>72"	14.7	12.1
9	Dothan Fine Sandy Loam 2-5% Slopes	42-48"	5.8	0.0
14	Fuquay Loamy Sand 0-5% Slopes	>72"	0.1	0.1
19	Kalmia Loamy Fine Sand 2-5% Slopes	>72"	0.8	0.8
21	Lakeland Sand 0-5% Slopes	>72"	20.5	47.0
22	Lakeland Sand 0-5% Slopes	>72"	3.0	3.0
34	Pactolus Loamy Sand 0-5% Slopes	18-30"	16.1	16.4
44	Troup Loamy Sand 0-5% Slopes	>72"	31.4	35.2



Soils of the wetlands are documented in Table 3. Table 3 also describes the depth to seasonal high water table and the approximate acreage of each hydric soil map unit in each alignment.

Table 3. Onsite Wetland Soils Based on NRCS Soil Survey (Appendix B: Soil Photographs and Descriptions, Pages 5-6)

Soil #	Soil Name	Seasonal High Water Table	Alt. 1 Acres	Alt. 2 Acres
3	Bibb-Krinston Association	<10"	22.1	22.1
37	Rains Fine Sandy Loam	0-10"	3.5	1.0
40	Rutlege Loamy Sand	At or Near Surface	20.7	20.7

E. Wetland Habitat Classification and Description

The delineated jurisdictional wetlands were classified according to the NWI/ Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, 1979) (see Figures 2.1 and 2.2). The acreage of each wetland classified by NWI is contained in Table 4, below. Wetland habitats were classified using the Florida Natural Areas Inventory (FNAI, 2009) (see Figure 8 and Table 5, below). The wetland habitats were also classified according to FLUCCS (see Figure 7 and Table 1 above). Tables 4 and 5 include delineated areas located within the alignment. Actual impacted acreages will depend on the final design.

Table 4. Wetlands Classification Based on NWI / Cowardin

NWI / Cowardin Classification	Alternative 1 (Acres)	Alternative 2 (Acres)
PF01/2F, Freshwater Forested/ Shrub Wetland	5.8	5.8
PF01F, Freshwater Forested/ Shrub Wetland	4.8	4.8
PF03C, Freshwater Forested/ Shrub Wetland	0.8	0.8
PF04/1B, Freshwater Forested/ Shrub Wetland	7.0	7.0
PSS1C, Freshwater Forested/ Shrub Wetland	0.4	0.5
PSS1F, Freshwater Forested/ Shrub Wetland	0.7	0.0
PF02/1F, Freshwater Forested/ Shrub Wetland	2.8	0.0
PF01/4C, Freshwater Forested/ Shrub Wetland	10.9	10.9
PF01C, Freshwater Forested/ Shrub Wetland	5.5	5.5
PF03/1C, Freshwater Forested/ Shrub Wetland	5.9	5.9
PSS1/3C, Freshwater Forested/ Shrub Wetland	0.6	0.6
PUBF, Freshwater Pond	0.3	0.3
R2UBH, Riverine	0.7	0.7


Table 5. Wetlands Classification Based on FNAI

FNAI Classification	Alternative 1 (Acres)	Alternative 2 (Acres)
Seepage Slope	23.48	23.23
Basin Swamp	10.28	10.28
Dome Swamp	1.43	0
Bottomland Forest	21.66	21.66

1. Seepage Slope / Wet Prairie (FLUCCS #643 – Wet Prairie/Pine Savanna)
(NWI Classification – Palustrine, Freshwater Forested/Shrub Wetland)

Alternative 1 = 23.48 acres

Alternative 2 = 23.23 acres

Seepage slopes are on landscapes where the downward movement of ground water is redirected laterally by less permeable layers in the soil, such as increased clay content or spodic horizons, and water flows at or near the ground surface saturating the soils. Many endemic and imperiled herbaceous plant species are associated with seepage slopes since large areas of this community have been converted to pine plantations and are susceptible to alteration by fire-suppressed growth of woody species. The majority of the seepage slope / wet prairie within the alignments is fire suppressed and dominated by black titi (*Cliftonia monophylla*), white titi (*Cyrilla racemiflora*), and galberry (*Ilex glabra*). In areas that have been mowed, such as the power line easements, greater plant diversity was observed.

2. Basin Swamp (FLUCCS #617 – Mixed Wetland Hardwoods)
(NWI Classification – Palustrine, Freshwater Forested/Shrub Wetland)

Alternative 1 = 10.28 acres

Alternative 2 = 10.28 acres

Basin Swamps are wetland plant communities characterized by long periods of inundation punctuated by dry periods. These areas are depressions in a relatively flat landscape and are dominated by a variety of canopy, subcanopy, and shrub species such as black titi (*Cliftonia monophylla*), pond cypress (*Taxodium ascendens*), swamp bay (*Persea palustris*), swamp tupelo (*Nyssa biflora*), sweetbay magnolia (*Magnolia virginiana*) and slash pine (*Pinus elliottii*). The basin swamps within the alignments are fire suppressed. The groundcover coverage is sparse and diversity is low, which is likely a result of intense competition with woody species.

3. Dome Swamp (FLUCCS #630 – Mixed Wetland Hardwoods)
(NWI Classification – Palustrine, Freshwater Forested/Shrub Wetland)

Alternative 1 = 1.43 acres

Alternative 2 = 0.0 acres

Dome Swamps are wetland plant communities characterized by long periods of inundation and occur in depressions in the landscape that may or may not be associated with other types of wetland systems (they may be isolated systems). Dome swamps typically have a partially or entirely closed canopy of cypress, black gum and sweet bay,



which also characterizes the dome swamps in the alignments. The subcanopy consists of cypress, sweet bay, swamp tupelo, and red maple (*Acer rubrum*). The Dome Swamps contain a thick woody shrub understory of St. John's wort (*Hypericum chapmanii*), titi, myrtle leaf holly (*Ilex myrtifolia*), and fetterbush (*Lyonia lucida*).

4. Bottomland Forest (FLUCCS #615 – Bottom; and Stream & Lake)

(NWI Classification – 1) Palustrine, Freshwater Forested/Shrub Wetland & 2) Riverine)

Alternative 1 = 21.66 acres

Alternative 2 = 21.66 acres

Bottomland Forests are wetland plant communities that are typically contiguous with riverine communities. Bottomland forests are seasonally flooded and influenced by precipitation. Bottomland forests have closed canopies and a mixture of evergreen and deciduous trees in the canopy. The bottomland forest in the alignments surrounds both the Blackwater River and Clear Creek, which are both blackwater streams that drain into the Pensacola Bay.

F. Potential Wetland Impacts

1. Direct and Shading Impacts

State and Federal agencies may exert jurisdiction over all wetland areas located within the alignments. Direct wetland impacts and impacts from shading will require permits from both agencies and mitigation will likely be required for the direct impacts. The State and Federal agencies use UMAM to determine the amount of mitigation required to offset impacts to wetlands and other surface waters. Agencies requiring permits will likely include:

- FDEP: Environmental Resource Permit and Sovereign Submerged Lands
- USACOE: CWA Section 404 Dredge and Fill Permit
- FDEP: NPDES Permit

The FNAI classification of wetland habitats was used for evaluating potential wetland impacts in the proposed alignment areas. The impacts were evaluated by comparing the current condition of each FNAI wetland habitat with the condition of a restored FNAI wetland habitat at a reference site. The condition of the restored habitat at the reference site indicates that the appropriate landscape treatments are being applied to the alignments, the appropriate surrounding land uses are present, and that there is an appropriate mix of flora and fauna.

The wetlands in the alignments are medium/high quality wetlands, based on the UMAM scoring procedure, since most wetland habitats resembled the reference condition. Anomalies exist where power lines have been constructed through wetlands, where silvicultural activities are conducted, and adjacent to development. In these disturbed areas, the wetland vegetation has either been mowed or the vegetation is fire suppressed and the appropriate ground cover species are not present.



2. UMAM Explanation

a. Location and Landscape

The pre-project location and landscape scores for the alignments ranged from moderate (7) to optimal (9) in the current condition due to the following factors: the location of the alignments and overall landscape; connectivity to the Blackwater River and Clear Creek; the relatively un-developed surrounding land use with a variety of natural conditions and connectivity; and a lack of significant barriers to wildlife movement. In the post-project condition, the wetlands proposed for direct impact have been scored "0" while those wetlands affected by indirect impacts, or shading due to bridges such as the floodplain of the Blackwater River, have been reduced by "2" points from the pre-project scores.

b. Water Environment

In general, the existing wetland hydrology supports the natural communities and no significant alternation in hydroperiods from historic patterns was documented. The impacts to hydrology are directly associated with adjacent silviculture and agriculture, primarily ditching and furrowing. Most of these effects are less pronounced within the floodplains of the Blackwater River. Some minor hydrologic impacts may be associated with roadways and power lines. The current conditions scores are in the optimal range and the direct impacts have been scored "0". There were no with project score decreases for the water environment UMAM parameter as a result of proposed shading and bridge construction.

c. Vegetation Structure

The principal components of the structure variable in this environment are: appropriate species; appropriate diversity and distribution of these species; appropriate vertical structure (i.e., canopy and groundcover); and the ability of the vegetation to carry and withstand a fire. Most of the wetlands within the alignments have been maintained in their appropriate conditions and current condition scores are in the optimal range (from 8 to 10) based upon the degree of vegetative alteration from fire suppression and/or typical disturbance regimes such as fallen trees from storms. Highly altered areas, such as those within the power lines and adjacent to agricultural areas received moderate scores. In the post-project scoring, the areas proposed for direct impact have been scored a "0" while those areas being shaded have been reduced by "1" or "2" points based on the type of vegetation located beneath the proposed roadway.

The UMAM polygon scores are included in Tables 7 and 8, below, and the full Part 1 and Part 2 UMAM polygon evaluation sheets are provided as Appendix C. Maps of the scoring polygon areas are included as Figures 8.1 through 8.9.


d. UMAM Summary

Alternative 1 traverses more wetland areas than Alternative 2. The following summary Tables 6 and 7 include the polygon name, wetland classifications (based on FNAI and



FLUCCS), acreage, polygon score, and functional loss for alignment alternatives 1 and 2, respectively.


Table 6. Alignment 1 UMAM Summary

 Alignment 1 UMAM Summary Table												
Polygon #	Impact Type	FNAI Wetland ID	FLUCFCS Wetland ID	Location & Landscape Support		Water Environment		Community Structure/Vegetation		Assessment Score	Area (ac)	FL Unit(s)
				Without	With Project	Without	With	Without	With			
1A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	9	0	0.93	2.95	2.75
1	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	7	10	9	9	7	0.17	15.13	2.52
2	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	9	0	9	0	8	0	0.87	0.04	0.03
3	Shading	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	8	8	8	7	6	0.07	2.02	0.13
4	Shading	Basin Swamp	617-Mixed Wetland Hardwoods	9	8	9	8	9	6	0.17	4.15	0.69
5	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	8	0	0.83	6.35	5.29
6	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	8	0	8	0	7	0	0.77	3.34	2.56
7	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	4.55	3.34
8	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	7	0	0.80	2.34	1.87
9	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	8	10	8	8	6	0.17	1.08	0.18
9A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	8	0	0.90	2.50	2.25
10	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	6	0	7	0	6	0	0.63	2.75	1.74
11	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	8.14	5.97
12	Permanent-Dredge or Fill	Dome Swamp	630-Mixed Forested Wetland	9	0	9	0	8	0	0.87	1.43	1.24
13	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	6	0	7	0	6	0	0.63	0.25	0.16
14	Indirect	Adjacent to Shading Impact		9	8	10	10	9	8	0.07	60.07	4.00
15	Indirect	Adjacent to Direct Impact		8	6	8	4	7	6	0.23	79.33	18.51
											Total FL	53.25

Acreage Totals	
Direct Impacts	34.64
Shading Impacts	22.38
Indirect Impacts	139.40
Total Wetlands	196.42



Table 7. Alignment 2 UMAM Summary

 Alignment 2 UMAM Summary Table												
Polygon #	Impact Type	FNAI Wetland ID	FLUCFCS Wetland ID	Location & Landscape Support		Water Environment		Community Structure/Vegetation		Assessment Score	Area (ac)	FL Unit(s)
				Without	With Project	Without	With	Without	With			
1A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	9	0	0.93	2.95	2.75
1	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	7	10	9	9	7	0.17	15.13	2.52
2	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	9	0	9	0	8	0	0.87	0.04	0.03
3	Shading	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	8	8	8	7	6	0.07	2.02	0.13
4	Shading	Basin Swamp	617-Mixed Wetland Hardwoods	9	8	9	8	9	6	0.17	4.15	0.69
5	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	8	0	0.83	6.35	5.29
6	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	8	0	8	0	7	0	0.77	3.34	2.56
7	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	4.55	3.34
8	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	7	0	0.80	2.34	1.87
9	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	8	10	8	8	6	0.17	1.08	0.18
9A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	8	0	0.90	2.50	2.25
10	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	6	0	7	0	6	0	0.63	2.75	1.74
11	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	8.14	5.97
14	Indirect	Adjacent to Shading Impact		9	8	10	10	9	8	0.07	60.07	4.00
15	Indirect	Adjacent to Direct Impact		8	6	8	4	7	6	0.23	73.94	17.25
											Total FL>	50.60

Acreage Totals	
Direct Impacts	30.62
Shading Impacts	22.38
Indirect Impacts	134.01
Total Wetlands	187.01

3. Indirect and Cumulative Impacts

Indirect wetland impacts associated with the alignments are expected to be minor, but there may be impacts to wildlife utilization and hydrology. Roadway construction may increase risks to wildlife, such as traffic mortality, noise, and light, negatively impacting the location and landscape score. There will be little indirect and cumulative impacts to the Water Environment score since bridges will be used where feasible and culverts will be placed beneath the road where wetlands typically have surface flow. Bridges and

culverts placed at the appropriate elevations will minimize indirect and cumulative impacts. The Community Structure score may be negatively impacted by new roadway construction since there will be a new vector for invasive and exotic plant species to be transported to the alignments.

Indirect and cumulative impacts are typically assessed within a 300 foot buffer adjacent to the verified wetland boundaries. Typical UMAM score reductions are shown in the Tables 6 and 7 as polygons 13 & 14 (Figures 8.8 and 8.9) with an estimate of the functional loss; however, the wetland lines should be verified and the methodology for assessment reviewed with the regulatory agencies during the permit process. Additional cumulative impacts may not be assessed if mitigation is provided in the same sub-watershed.

IV. ALTERNATIVES EVALUATION

A. Alternatives Summary

Six different alignment alternatives and the no-build alternative were evaluated during the alternatives phase of the PD&E. The alternatives evaluation and the figure below, depicting the six original alignments, were documented in the *Corridors Alternative Evaluation Summary Report* (Metric Engineering, 2011).

Figure 2.1 Corridor Maps



(Metric, 2011- Page 10)



The alignment alternatives evaluation resulted in the elimination of Alternative 3, Alternative 4, Alternative 5, and Alternative 6. Alternatives 1 & 2 moved forward for additional analysis and comparison.

B. No-Build Alternative

NEPA and FHWA guidelines require an analysis to consider what would happen to the environment in the future if the proposed project was not built. The no-build alternative is not tenable due to the failing LOS for the existing corridor; however, it does provide a baseline condition to compare and measure the effects of all the build alternatives. Without the new corridor or extensive multi-laning of the north/south routes (SR 87, SR 89) and east/west route (US 90), this area, especially east of the Blackwater River Bridge, will continue to suffer from constrained conditions, and development east and north of Milton will be hindered.

C. Alternatives Evaluation

The results of the alignment evaluation indicated that alignment 1 was ranked the highest overall of the alignments. Alignment 1 scored high in terms of the project's purpose and need and was the least costly for construction. Table 9, below, from the "Corridors Alternative Evaluation Summary Report," shows the overall rankings of each alignment considering each of the evaluated parameters:

Table 9 – Alternatives Evaluation Ranking Matrix

20%		Relative Weight							
.40		Resulting Score							
Corridor	Evaluation Parameter	40%	20%	30%	10%	Final Rank (Score)			
		Purpose and Need	Traffic	Environmental	Cost				
1	1	.40	1	.20	3	.60	4	.40	1 (1.60)
2	3	1.20	3	.20	5	1.20	5	.50	3 (3.10)
3	2	.80	5	.20	3	.90	6	.60	2 (2.50)
4	5	2.00	3	.80	2	1.20	1	.10	5 (4.10)
5	6	2.40	5	.80	1	.30	2	.20	4 (3.70)
6	4	1.60	1	.80	6	1.80	3	.30	5 (4.50)

(Metric, 2011 – Page 38)



Additional analysis was then conducted on alignments 1 & 2 since they resulted in a similar ranking and both met the purpose and need of the PD&E. Both alignments met the purpose and need and moved forward for further evaluation. The field assessments described in this WER were therefore conducted on both alignments 1 and 2 to determine the preferred alignment.

Alignment 1: Alternative 1 would extend north from the US 90 and SR 87S intersection, crossing the Blackwater River near the existing power line easement. Then the roadway would run adjacent to the power line easement and connect with SR 87N near the southern split of SR 87N and SR 89 within the Manning Lane right-of-way. This alternative would be approximately 6.5 miles in length. See Figure 1 for the location of alignment 1.

Alignment 2: Alternative 2 is the same as Alternative 1 for the first portion, crossing the Blackwater River in the same area, but continuing north and running adjacent to the Clear Water Creek desired Florida Forever purchase area. Then the roadway would continue west to connect with SR 87N near the northern split of SR 87N and SR 89. This alternative would be approximately 7.2 miles in length. See Figure 1 for the location of alignment 2.

D. Avoidance and Minimization

1. Avoidance

The alternative analysis documented how wetland impacts were avoided to the maximum extent practicable, given the project needs, costs, and logistics. An alternatives evaluation analysis was conducted and the results were summarized in the *Corridors Alternative Evaluation Summary Report* (Metric, 2011). Avoidance of project related impacts was considered and evaluated in relation to the logistics of the proposed alignments and the project purpose. The southern alignments 4, 5, & 6 impacted more wetland acreage than the northern alignments 1, 2, & 3 (see Table 9, below). In addition to the quantity of wetland impacts, the southern alignments did not meet the needs of the project and would have impacted State of Florida conservation lands owned by the NFWFMD. After consideration, the three southern alignment alternatives were eliminated from further analysis.

Table 9 – Estimated National Wetland Inventory Impacts for Alignments 1-6

		Alignments					
Criterion		1	2	3	4	5	6
Total Alignment Acres		411.28	500.26	626.72	345.76	338.35	406.40
NWI Wetlands (Acres)	Palustrine	92.58	90.37	44.67	108.77	105.8	126.82
	Estuarine	0	0	0	16.03	16.03	16.03
	Total	92.58	90.37	44.67	124.8	121.83	142.85
	% of Total	23%	18%	7%	36%	36%	35%



Out of the remaining three northern alignment alternatives, alternative 3 had the least potential wetland impact; however, it traversed land purchased by the FDEP as part of the Florida Forever project. Due to this logistical concern, alignment 3 was no longer feasible to meet the purpose of the project. Alignments 1 & 2 have remained for further evaluation since they avoid the most wetland areas possible while still meeting the public need and project purpose. Avoidance of all wetland impacts was not feasible along the length of the project. Wetlands have been avoided to the maximum extent practicable.

Table 10 – Alignments 1 and 2 Delineated Wetland Impacts by Habitat Type

Habitat Type (FNAI/FLUCCS)	Alignment 1 Impact (acres)	Alignment 2 Impact (acres)
Seepage Slope - Wet Prairie / 643	23.48	23.23
Basin Swamp / 617	10.28	10.28
Dome Swamp / 630	1.43	0
Bottomland Forest / 615	21.66	21.66
Total	56.85	55.17

2. Minimization

Potential wetland impacts have also been minimized to the maximum extent practicable with the use of bridges, stormwater collection methods, construction methodology, and with the maintenance of pre and post hydrological flow between wetlands and streams. Bridges are proposed over Blackwater River and its floodplain, Clear Creek and its floodplain, and wetlands associated with the reticulated flatwoods salamander Critical Habitat Area. Figures depicting the previously considered alignments as they relate to minimization of wetland impacts are included in Appendix F. Potential wetland impacts were estimated based on each alignment shift, revision, or reduction (including revisions to bridge length). The first wetland impact acreage was calculated after the initial wetland delineation in September 2011 and resulted in 129 acres of potential wetland impact. Based on the alignment revisions, the current potential wetland impact is 55 acres (+/-).

a. Bridges and Stormwater Treatment

i. Blackwater River Floodplain

Both alternatives cross the Blackwater River and its floodplain area. In order to minimize direct, indirect, and long-term impacts, the entire floodplain area will be bridged. At the start of the bridge, a retaining wall will be constructed 25 feet landward of the jurisdictional wetland line to buffer the wetlands. The maximum amount of stormwater possible, given the land elevation at the start of the bridge south of the river, will be captured from the roadway surface and conveyed to stormwater ponds



located to the north and south of the floodplain area to minimize runoff into the river or the wetlands below the bridge. The bridge over the Blackwater River will be 5,570 ft. long, 100 feet wide (in two separate sections – 56 feet wide and 49 feet wide), and 28.25 ft. above the ground. The height and width of the proposed bridges are adequate to provide light penetration to the ground and allow for groundcover regrowth and survival. Typical Sections and Profile Sheets have been included as Appendices G and H, respectively.

ii. Wetlands Associated With Reticulated Flatwoods Salamander Critical Habitat

Both alternative alignments traverse the critical habitat area of the reticulated flatwoods salamander. In order to minimize impacts to wetlands that serve as potential breeding habitat, the alignments were shifted to roughly parallel the power line easement on the southernmost edge of the critical habitat unit, which is already a disturbed linear feature traversing this area. In an effort to minimize direct impact to the wetlands, all of the wetland area traversed by the alignment will be bridged. Stormwater treatment systems will convey all runoff from the bridge to stormwater ponds to avoid and minimize impacts to wetlands and water quality under the bridge. The bridge through the critical habitat is a continuation of the bridge over the Blackwater River, 100 feet wide (in two separate sections), and 28.25 feet above the ground. The height and width of the proposed bridges are adequate to provide light penetration to the ground and allow for groundcover regrowth and survival. Typical Sections and Profile Sheets have been included as Appendices G and H, respectively.

iii. Clear Creek

Both alternatives cross Clear Creek and its floodplain area. In order to minimize direct, indirect, and long-term impacts, the open water portion of the creek and a portion of the floodplain will be bridged. The bridge length was determined based on the analysis conducted for the Bridge Hydraulics Report (Metric, 2012). The primary goal of the bridge is to reduce upstream flooding and to allow the creek to flow unobstructed to receiving waterbodies. Bridging the entire floodplain is not feasible since the length of the bridge over the Blackwater River and the reticulated flatwoods salamander critical habitat unit significantly increased in length resulting in an increase in overall projected construction costs. The bridge over Clear Creek will help to minimize impacts to the creek bed, which provides habitat for many aquatic organisms. Stormwater will be captured from the roadway surface and conveyed to stormwater ponds located to the north and south of the floodplain area to minimize runoff into the creek or the wetlands below the bridge. The bridge over Clear Creek will be 160 ft. long, 100 feet wide (in two separate sections), and 28.25 ft. above the ground. The canopy and some shrubs will be impacted long term by the bridges and groundcover will be impacted during construction. The height and width of the proposed bridges are adequate to provide light penetration to the ground and allow for groundcover regrowth and survival. Typical Sections and Profile Sheets have been included as Appendices G and H, respectively.

**b. Construction methodology**

During construction, wetlands outside of the limits of construction will be protected from impacts using standard construction Best Management Practices (BMPs). Bridge construction will occur from retaining wall to retaining wall to prevent sediment deposition within floodplains and stream systems.

c. Hydrological Connections

Connections and hydrological flows between wetland systems will be maintained by using culverts to connect wetlands that may be bisected by the proposed roadway alignments. Prior to final design, the areas of existing flow will be demarcated so that culverts can be placed at the appropriate locations and elevations. The use of culverts will ensure post-project flow regimes similar to the current condition and will prevent flooding, which will help to maintain wetland hydroperiod and function.

d. Threatened and Endangered Plant and Animal Species

No Federally listed wildlife species or plant species were observed during the field survey; however, critical habitats of the reticulated flatwoods salamander and Gulf sturgeon were located within the alignments. Impacts to these critical habitats will be minimized by constructing as described above. The only State listed animal species observed was the gopher tortoise; however, this species is not wetland dependent and the minimization measures described in this WER will have no beneficial impact to this species. FDOT will commit to pre-construction surveys and will coordinate with the FWC during design/build phase of the SR 87 Connector project. State-listed plants likely exist in the project alignment areas since suitable habitat areas occur based on habitat mapping. Pedestrian searches of these habitat areas were conducted for each state listed species. The Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (DOACS) and Endangered Plant Advisory Council (EPAC) are being notified that FDOT as owner is allowing for salvaging by others of affected protected plants on this project prior to construction in accordance with state law (Chapter 581.185, Florida Statutes), pending their receipt of the appropriate permits. ***It is our conclusion that protected plants potentially occurring within the project corridor will be impacted and may be salvaged in accordance with state law (Chapter 581.185, F.S.).*** Complete results, analysis, and determinations of effect for species are contained in the Endangered Species Biological Assessment Report (ESBAR) (ERC & Metric, 2012).

C. Mitigation / Impact Compensation

Wetland impacts are typically mitigated pursuant to Section 373.4137 Florida Statutes. In accordance with Florida Highway Administration (FHWA) policy, as contained in 23 CFR 77.11, the full range of mitigation options are being considered in developing this project to avoid long and short-term adverse impacts to wetland resources and to avoid new construction in wetlands wherever there is a practicable alternative. Alignment 1 results in a functional loss of 53.25 units and Alignment 2 results in a functional loss of



50.60 units, which includes indirect and cumulative impacts. To compensate for this functional loss, there are two options: Option 1 is the purchase of credits from the Pensacola Bay Mitigation Bank (PBMB), and option 2 is NFWFMD mitigation. The Interagency Review Team (IRT) will evaluate the options below to determine the most suitable mitigation option during the permitting of the proposed alignment impacts. Currently, 373.4137 F.S. allows FDOT any mitigation option that meets Federal and State Requirements.

1. PBMB

The PBMB is a 1,200 acre site located in Santa Rosa County that offers hardwood, pine flatwoods, and herbaceous wetlands credits. The PBMB was permitted using UMAM and has “like-for-like” credits available to offset potential alignment impacts. Credits for the PBMB are currently priced between \$25,000 and \$50,000 per credit and there are approximately 122 credits available for purchase at this time. The restoration activities that are required to obtain credit release are continuing on the PBMB and it is anticipated that additional credits will be available at the time of construction.

2. NFWFMD Mitigation

In Northwest Florida, mitigation is analyzed under the Northwest Florida Umbrella, Watershed-based, Regional Mitigation Plan (UWRMP), which was established in 2006. The UWRMP is a cooperative agreement between the NFWFMD and the USACOE. The team identifies mitigation options for projected impacts and develops mitigation plans. There are two mitigation areas within the Pensacola Bay Watershed with credits available, the Yellow River Ranch Site and the Dutex Property. The Yellow River Ranch site is located in the proximity of the SR 87 alignments and has approximately 50 credits available. The Dutex property is located within the Perdido watershed and has approximately 110 credits available.

D. Wildlife

Threatened and endangered plant and animal species potential occurrence were evaluated using known occurrence data for Santa Rosa County from FNAI Florida Element Occurrence records and by conducting field surveys, which traversed 80% or more of the habitat with transects. The State threatened animal species in the alignments were located within uplands and will typically not be considered during the wetland permitting process. The State threatened and endangered plant species were primarily located within wetlands and have been considered in the community structure scoring of the UMAM evaluation. The complete findings of threatened and endangered species survey are included in the SR 87 PD&E ESBAR (ERC & Metric, 2012).

E. Floodplains

The majority of the alignments are located within Floodzone X, which is not a Special Flood Hazard Area (SFHA) (FEMA, 2011). Where the alignments cross Blackwater River and Clear Creek, they are located within Floodzone AE, which is a SFHA. Bridges have been proposed in both locations where the alignments traverse the SFHAs. The only



impacts to these areas will be from sideslopes to create headwalls for the bridges and pilings.

Both alignments have the same 94.22 acre impact to floodplains. The bridge over the Blackwater River will be approximately 5,570 linear feet and the bridge over Clear Creek will be approximately 160 linear feet. There are currently no existing bridges in the proposed locations.

F. State Lands

The Blackwater River and Clear Creek were determined to be Sovereign Submerged Lands (SSL) by the FDEP Division of State Lands. Public easements will be required for the bridges over the Blackwater River and Clear Creek. The FDEP State Lands determination is included as Appendix E.

V. AGENCY COORDINATION & REQUIRED PERMITS

The State and Federal agencies will exert jurisdiction over the wetlands and waters delineated within the alignment areas. Coordination with the regulatory agencies will continue through the design phase to evaluate permitting and mitigation requirements. The project is anticipated to require an Environmental Resource Permit (ERP) from the FDEP since Sovereign Submerged Lands are involved, and a Section 404 dredge and fill individual permit from the USACOE. This project will also require a National Pollution Discharge Elimination System (NPDES) permit from the FDEP since one or more acres of land are proposed to be filled. The FDOT will coordinate with the FDEP, USACOE, EPA, National Marine Fisheries Service (NMFS), US Fish and Wildlife Service (USFWS), and the Florida Fish and Wildlife Conservation Commission (FFWCC) regarding potential impacts to wetlands and wildlife species.

On May 21, 2010 Peggy Kelley (FDOT), John Flora (Metric), and Daniel Van Nostrand (ERC) met with the FDEP – Division of State Lands and the Northwest Florida Water Management District (NFWFMD) to discuss the public lands and desired Florida Forever tracts in the vicinity of the proposed corridors. The FDEP stated that corridors 2 and 3 traversed areas that were desired for purchase with Florida Forever funds. The NFWFMD stated that they owned lands within the Blackwater River that were within the paths of corridors 4, 5, and 6, south of Highway 90. The NFWFMD comments were significant in the decision to eliminate the southern corridors (4, 5, and 6) from further review.

On June 30, 2011, FDOT was notified by FDEP that funds were obtained to purchase Florida Forever lands northeast of Whiting Field. Corridor 3 traversed this land acquisition area. FDEP does not allow road construction through Florida Forever tracts and Corridor 3 was eliminated from further review.



FHWA received a notification letter from the US Coast Guard stating that bridge permitting would not be required for this project, if FHWA makes the determination that the project meets the requirements for the Surface Transportation Act (STAA). FDOT and FHWA will conduct further coordination regarding this determination. A copy of the memo is provided below:

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
Eighth Coast Guard District
Hale Boggs Federal Building

500 Poydras Street, Room 1313
New Orleans, LA 70130-3310
Staff Symbol: (dpb)
Phone: (504) 671-2128
Fax: (504) 671-2133
D8DPBALL@uscg.mil

16591C
March 9, 2012

Ms. Joy Giddens
Environmental Permits Director
Florida Department of Transportation
P.O. Box 607
Chipley, Florida 32428

Dear Ms. Giddens:

We have reviewed your information package, pertaining to Florida Department of Transportation's proposed project crossing the Blackwater River at Milton, in Santa Rosa County, Florida. We understand that this bridge project may be federally funded.

As part of our project review, we received a Bridge project Questionnaire from the Finley Engineering Group, Inc., dated December 20, 2011 along with a site map and pictures of the proposed bridge site. Based on our observations and the information that was provided, as well as the fact that Federal funds may be utilized for this project, it appears that the waterway, at the site of the bridge, would meet the criteria for the Surface Transportation Act of 1978 (STAA). In such cases, FHWA has the responsibility for the STAA under 23 U.S.C. 144(h) and would make the determination as to whether or not a Coast Guard Bridge Permit would be required. Based on 23 CFR Part 650.805, a Coast Guard Bridge permit would not be required if the FHWA determines that the proposed construction, reconstruction, rehabilitation or replacement of the federally funded or federally assisted funded bridge crosses waterways which (1) are not used or are not susceptible for use in their natural condition, or by reasonable improvement as a means to transport interstate or foreign commerce; and (2) which are not tidal, or if tidal, used only by recreational boating, fishing, and or other small vessels less than 21 feet in length.

Should FHWA determine that Blackwater River, at the bridge location, meets the criteria for the STAA, the Coast Guard would accept that determination and the project would be exempt from Coast Guard Bridge Administration purposes. Therefore, I suggest that you contact the FHWA Division Administrator in Tallahassee, Florida, regarding this proposed bridge project, and that you request that FHWA review the proposed project to determine if it meets the criteria for the STAA.

If you have any questions or if we can be of additional assistance please contact our office.

Sincerely,

DAVID M. FRANK
Chief of the Bridge Administration Branch
U. S. Coast Guard
By direction

Copy: Mr. Martin C. Knopp, P.E., Division Administrator, FHWA, Tallahassee, FL

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VI. CONCLUSION

Both alignment alternatives will impact wetlands. The impacts and functional UMAM loss are summarized in the following table:

Criteria	Alignment 1	Alignment 2
Direct Impact	34.64 Acres	30.62 Acres
Shading Impact	22.38 Acres	22.38 Acres
Indirect and Cumulative Impacts	139.40 Acres	134.01 Acres
Functional Loss (UMAM)	53.25 Units	50.60 Units

In order to avoid and minimize project related impacts, the Blackwater River and Clear Creek will be bridged, culverts will be used to connect impacted wetlands, and BMPs will be used to prevent impacts to wetlands outside of the construction boundary. Mitigation for unavoidable impacts can be accomplished by either using mitigation bank credits or Florida Statute 373.4137. Coordination with State and Federal regulatory agencies will be required for wetland impacts.

Required Permits

1. FDEP ERP Permit (For Wetlands and Stormwater Treatment)
2. FDEP SSL Authorization (Public Easement)
3. USACOE CWA Section 404 Dredge and Fill Permit
4. FDEP NPDES Permit



VII. REFERENCES

- Center for Plant Conservation, Missouri Botanical Garden. 1995. An Action Plan to Conserve the Native Plants of Florida. Southeast Environmental Research Program, Florida International University and Center for Plant Conservation.
- Chafin, Linda G. 2000. Field Guide to the Threatened and Endangered Plants of Florida. Florida Natural Areas Inventory, Tallahassee, Florida.
- Clewell, A.F. 1985. Guide to the Vascular Plants of the Florida Panhandle. University Press of Florida, Gainesville, Florida.
- Clewell, A.F. 1985a. Natural Setting and Vegetation of the Florida Panhandle. Florida State University Press, Tallahassee, Florida.
- Coile, Nancy. 1996. Notes on Florida's Endangered and Threatened Plants. Florida Department of Agriculture & Consumer Services, Division of Plant Industry. Gainesville, Florida.
- Cowardin, L M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Prepared for U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.
- Ecological Resource Consultants, Inc. 2012. Endangered Species Biological Assessment: SR 87 Connector PD&E Study. Panama City Beach, Florida.
- Ewel, K. C. 1990. Ecosystems of Florida. University Presses of Florida. Gainesville, Florida.
- Florida Game and Freshwater Fish Commission Nonage Wildlife Report. Technical Report No. 7. Summary Report on the Vascular Plants, Animals and Plant Communities Endemic to Florida. June 1989.
- Florida Natural Areas Inventory (FNAI). 2010. Guide to the Natural Communities of Florida: 2010 Edition. Florida Natural Areas Inventory, Tallahassee, Florida.
- Florida Natural Areas Inventory (FNAI). 2008. Florida Natural Areas Inventory, Tallahassee, Florida. Floodpl_v3 shapefile (www.fnai.org).
- Florida Natural Areas Inventory. 2001. Field Guide to the Threatened and endangered Animals of Florida. Florida Department of Environmental Regulation. Office of Environmental Services, Tallahassee, Florida.



- Florida Natural Areas Inventory. 1990. Guide to Natural Communities. Florida Department of Environmental Regulation. Office of Environmental Services, Tallahassee, Florida.
- Godfrey, R. K. 1988. Trees, Shrubs and Woody Vines of Northern Florida and Adjacent Georgia and Alabama. University of Georgia Press, Athens, Georgia.
- Metric Engineering. 2011. Corridor Alternatives Evaluation Summary Report, SR 87 Connector PD&E Study. Chipley, Florida.
- Metric Engineering. 2012. Bridge Hydraulics Report, SR 87 Connector PD&E Study. Chipley, Florida.
- Northwest Florida Water Management District. 2007. NFWFMD Springs January 2007 shapefile. Florida Geographic Data Library website (www.fgdl.org).
- Santa Rosa County, Florida. 2002. Community Planning, Zoning and Development Division. FLUM Santa Rosa County shapefile.
- Tobe, J. D., K. C. Burks, R. W. Cantrell, M. A. Garland, D. W. Hall, P. Wallace, G. Anglin, G. Nelson, J. R. Cooper, D. Bickner, K. Gilbert, N. Aymond, K. Greenwood and N. Raymond. 1998. Florida Wetland Plants: An Identification Manual. University of Florida, Institute of Food and Agricultural Sciences.
- USDA-Soil Conservation Services. 1980. Soil Survey of Santa Rosa County, Florida. Gainesville, Florida.
- U.S. Department of Agriculture, Natural Resources Conservation Service. Soil Survey Geographic (SSURGO) database for Santa Rosa County, Florida shapefile. USDA, NRCS, Texas. February 1, 2010. <http://soildatamart.nrcs.usda.gov/>
- U.S. Fish and Wildlife Service. 2010. Branch of Habitat Assessment, Washington, D.C. National Wetlands Inventory shapefile. U.S. Fish and Wildlife Service website (www.fws.gov/wetlands/)
- Wood, Don A. 1996. Florida's Endangered Species, Threatened Species and Species of Special Concern. Bureau of Nongame Wildlife, Florida game and Fish Water Fish Commission.
- Wunderlin, R. 1998. Guide to the Vascular Plants of Florida. University of Florida Press, Gainesville, Florida.



Overall Figures 1-5



Legend:

 Alignments



1:48,000
2010 True Color
Aerial

0 2,000 4,000 8,000 12,000
Feet

**Figure 1 Location Map: SR 87
Alternative Alignments
SR 87 Connector PD&E**



Legend:

- National Wetlands Inventory (USFWS, 2010)
- Alignments



0 2,000 4,000 8,000 12,000
Feet

Figure 2 Wetlands per NWI

SR 87 Connector PD&E

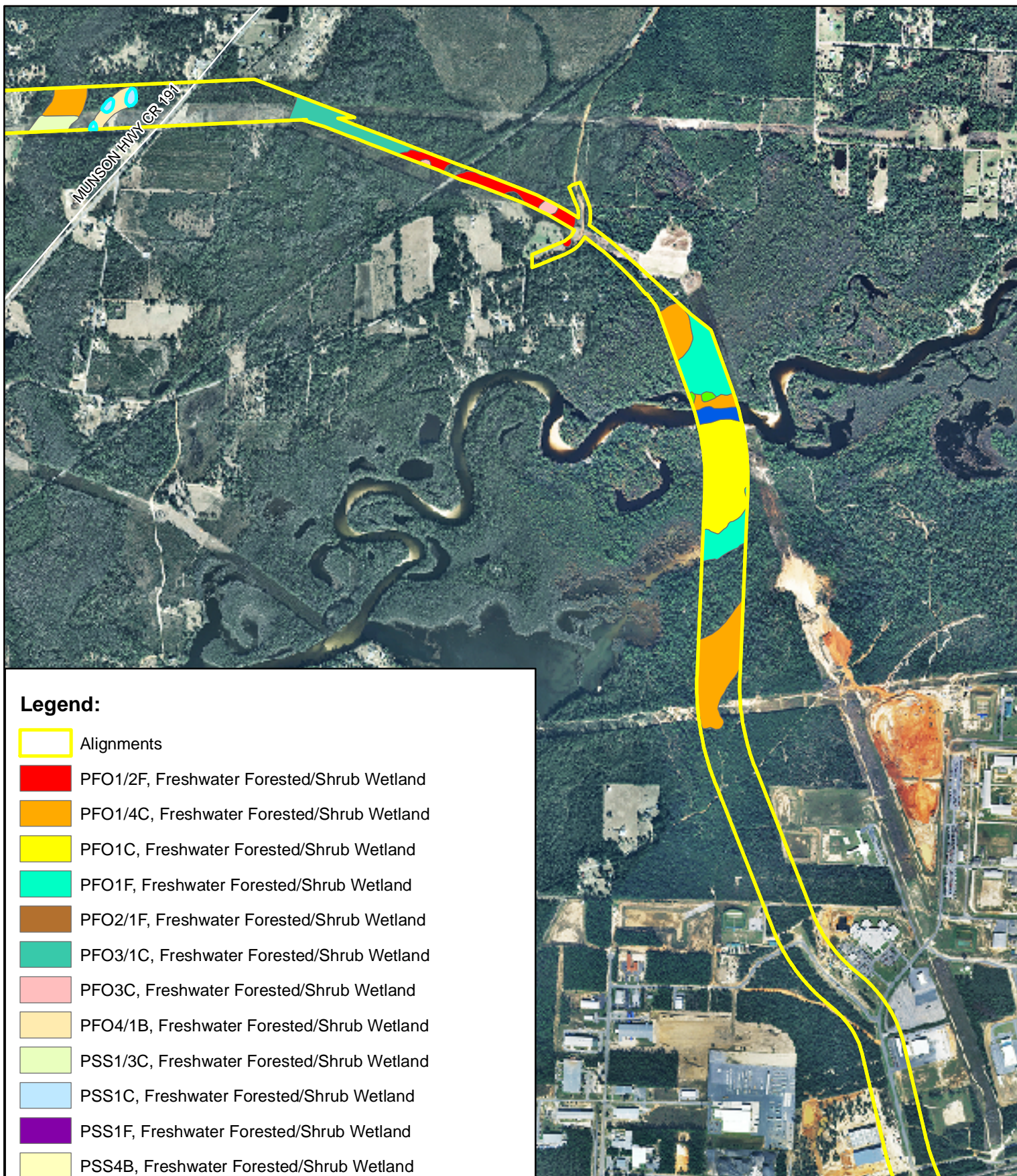
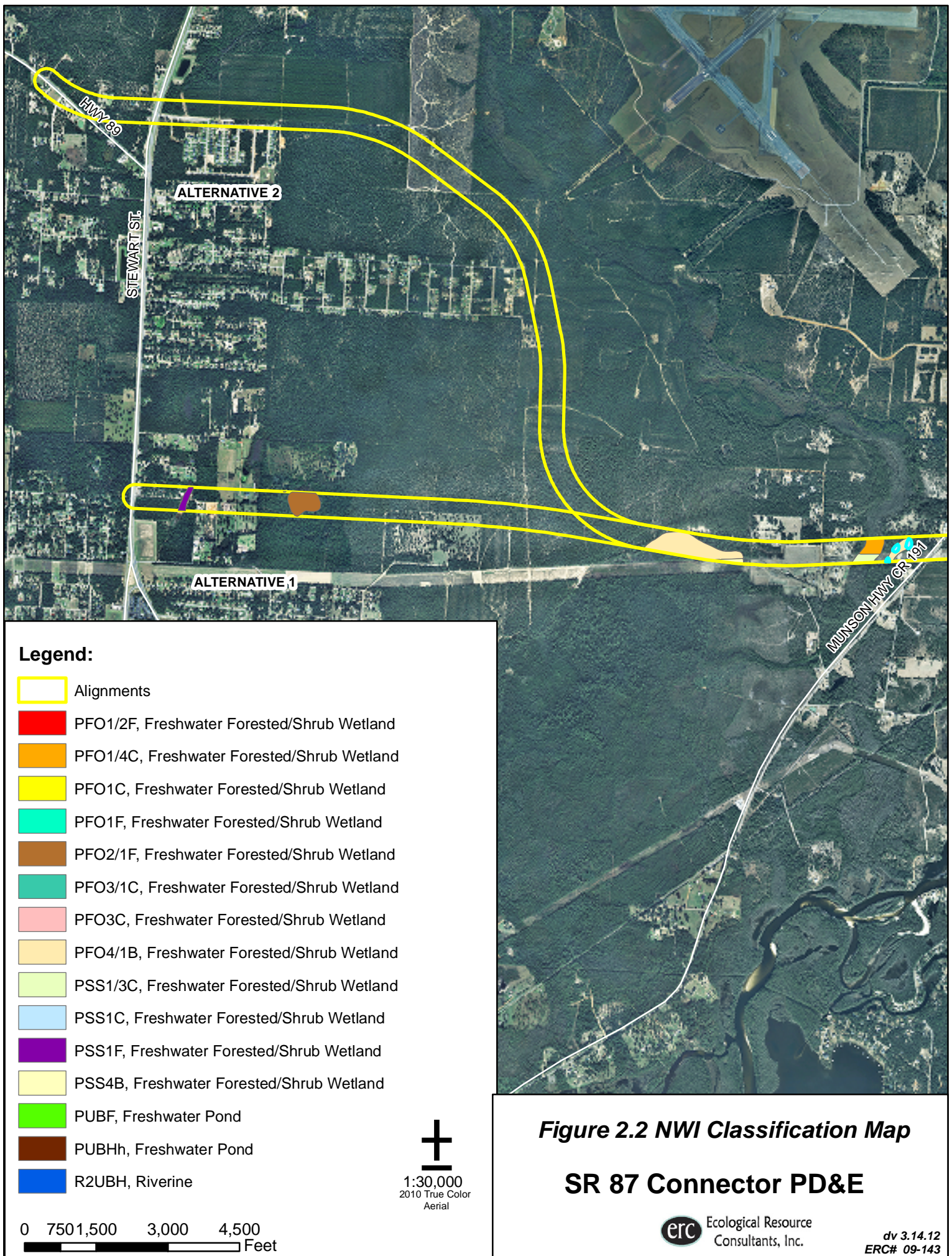
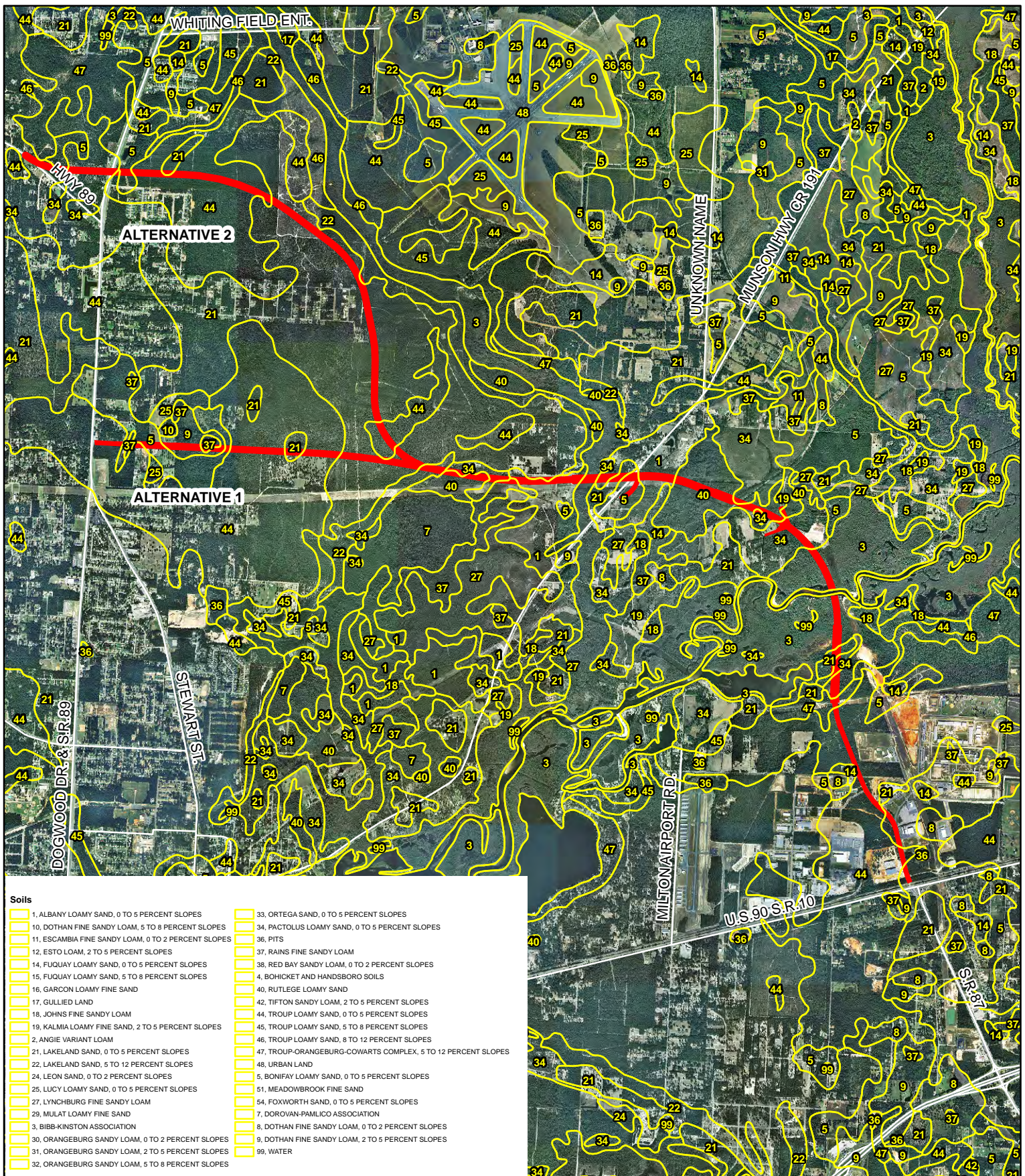


Figure 2.1 NWI Classification Map

SR 87 Connector PD&E





Legend:

 Alignments

N
1:48,000
2010 True Color
Aerial

0 2,000 4,000 8,000 12,000
Feet

Figure 3 NCRS Soils

SR 87 Connector PD&E

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JJL 7-2-15
ERC# 15-126



Legend:

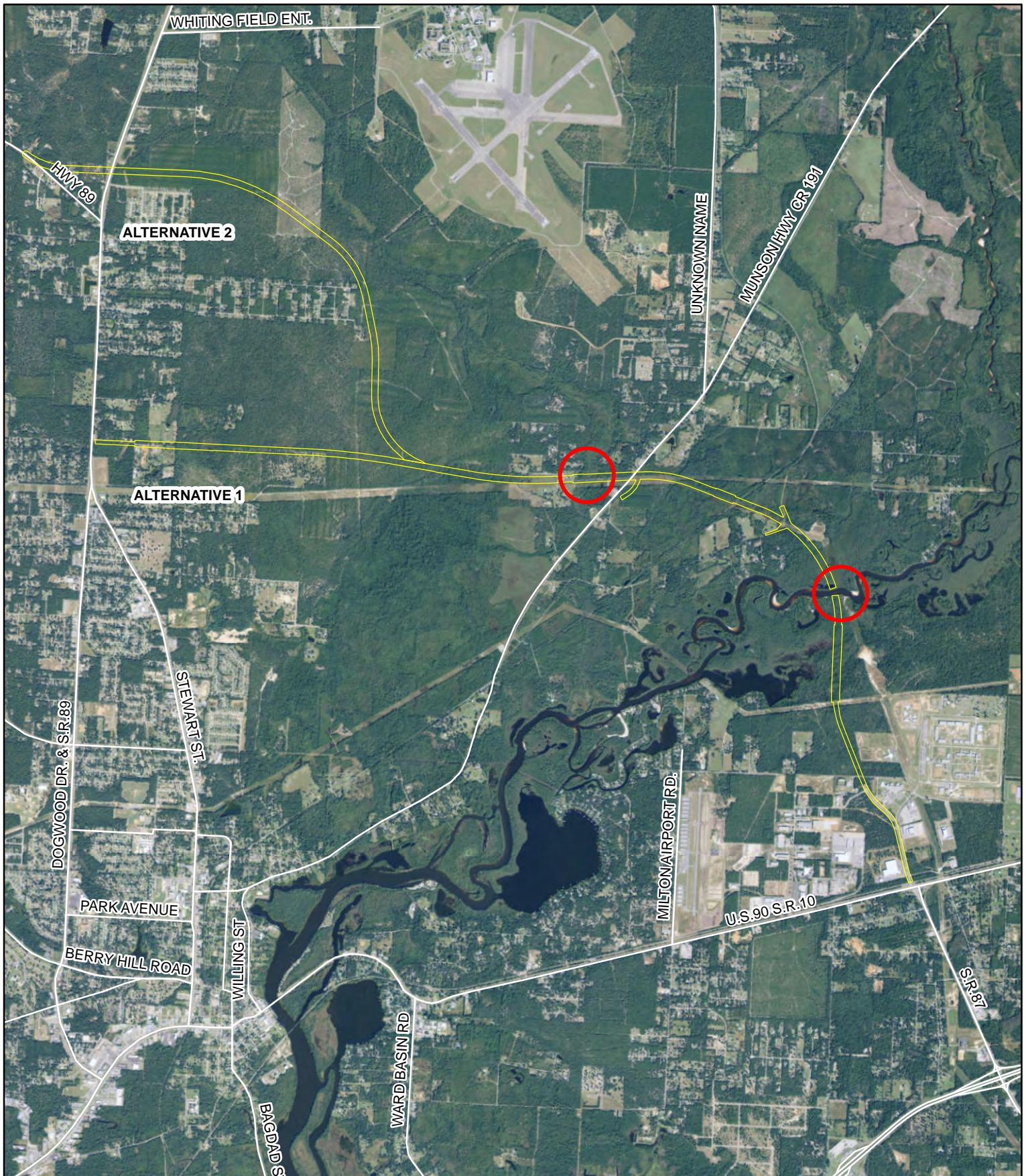
-  Floodplains*
-  Alignments

*FNAI, 2008

0 2,000 4,000 8,000 12,000 Feet



Figure 4 Floodplain Map
SR 87 Connector PD&E



Legend:

- Alignments
- Sovereign Submerged Lands*

* See Appendix E

0 2,000 4,000 8,000 12,000 Feet

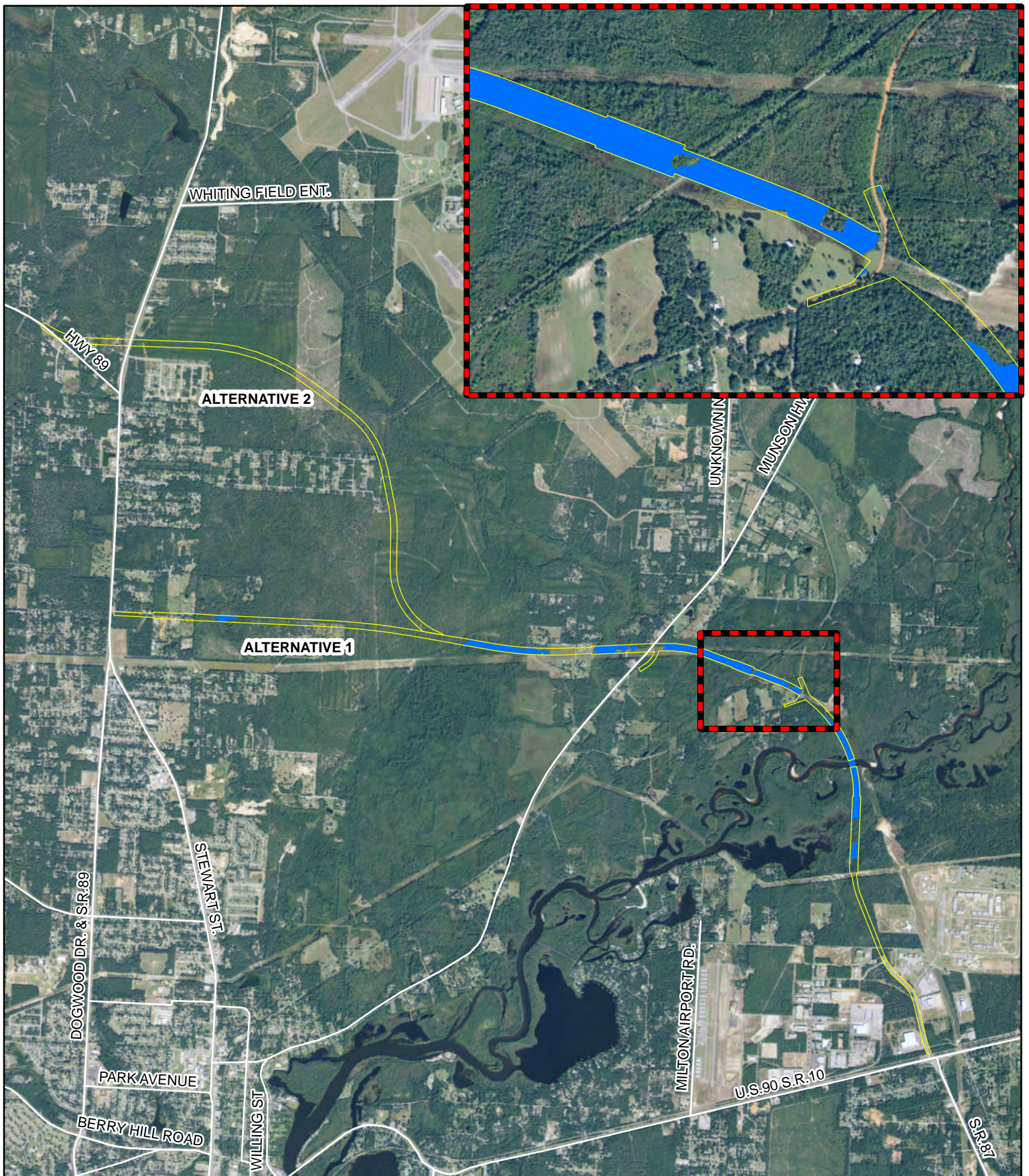


Figure 5 State Lands Map



SR 87 Connector PD&E



Wetland Delineation Figures 6 – 6.19



Legend:

-  Alignments
-  ERC Delineated Wetlands




1:48,000
2010 True Color
Aerial

0 2,000 4,000 8,000 12,000
Feet

**Figure 6. Overall Wetland
Delineation Map**
SR 87 Connector PD&E



Legend:

-  Alignments
-  Approximate Wetland Delineation Lines
-  ERC Delineated Wetlands


1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
Feet




Figure 6.1 Wetland Delineation Map 1
SR 87 Connector PD&E

 Ecological Resource
Consultants, Inc.

JJL 12/20/2011
ERC# 09-143



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands

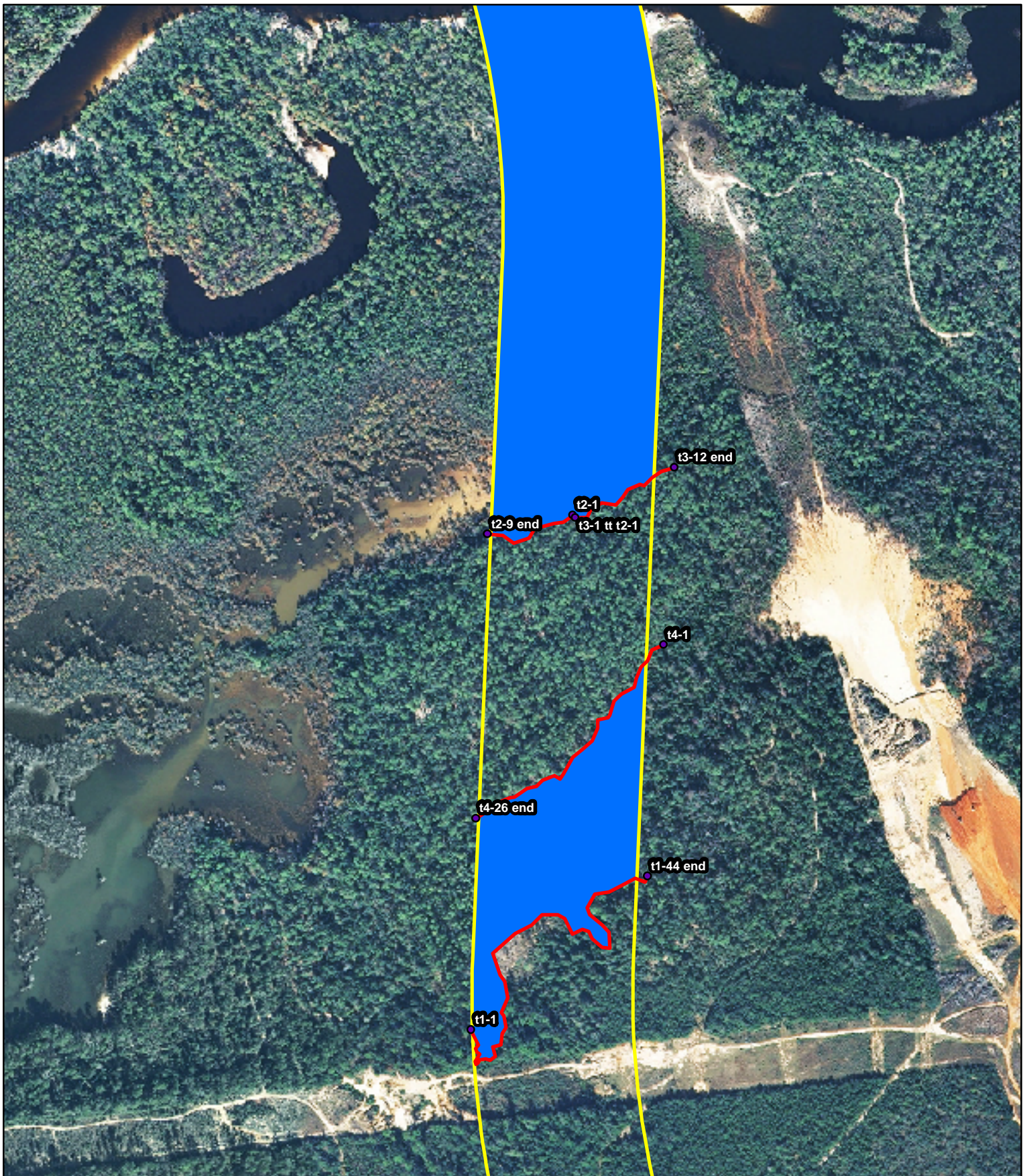

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2010 True Color
Aerial

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Feet




Figure 6.2 Wetland Delineation Map 2
SR 87 Connector PD&E

 Ecological Resource
Consultants, Inc.

JJL 12/20/2011
ERC# 09-143



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands

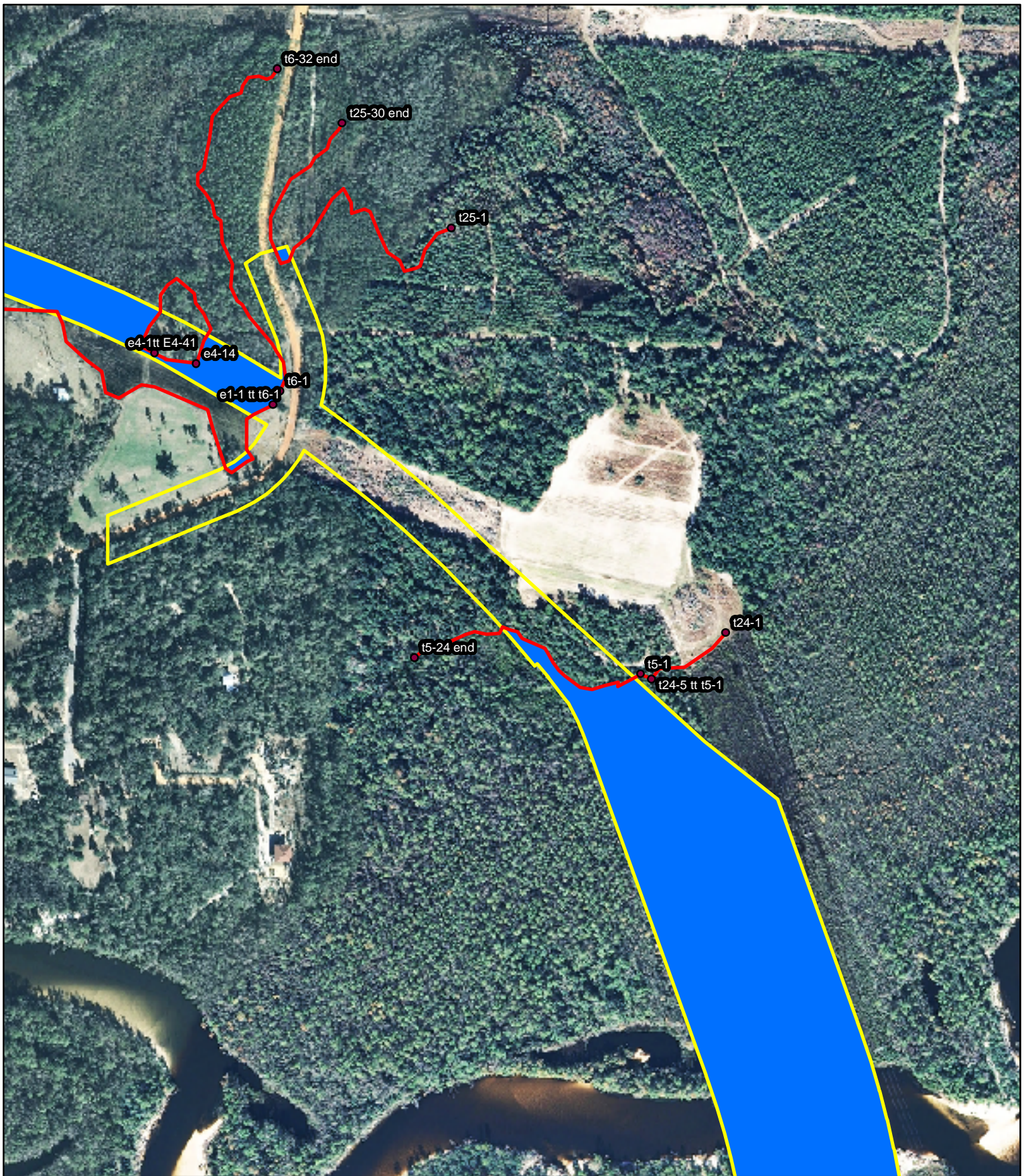

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2010 True Color
Aerial

0 200 400 800 1,200
Feet




Figure 6.3 Wetland Delineation Map 3
SR 87 Connector PD&E

 Ecological Resource
Consultants, Inc.

JJL 12/20/2011
ERC# 09-143



Legend:

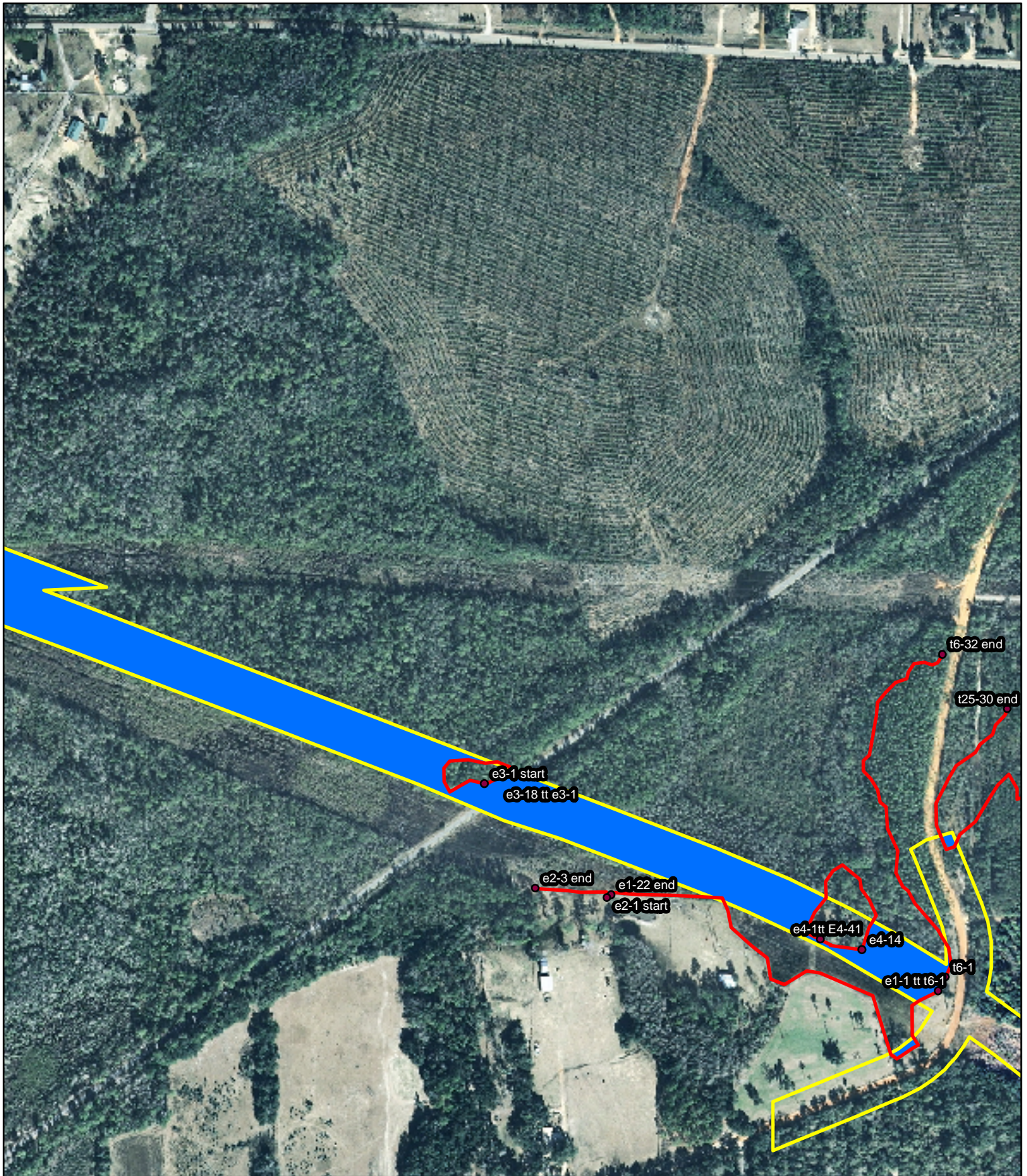
-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands






1:4,800
2010 True Color
Aerial

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Feet

Figure 6.4 Wetland Delineation Map 4
SR 87 Connector PD&E



Legend:

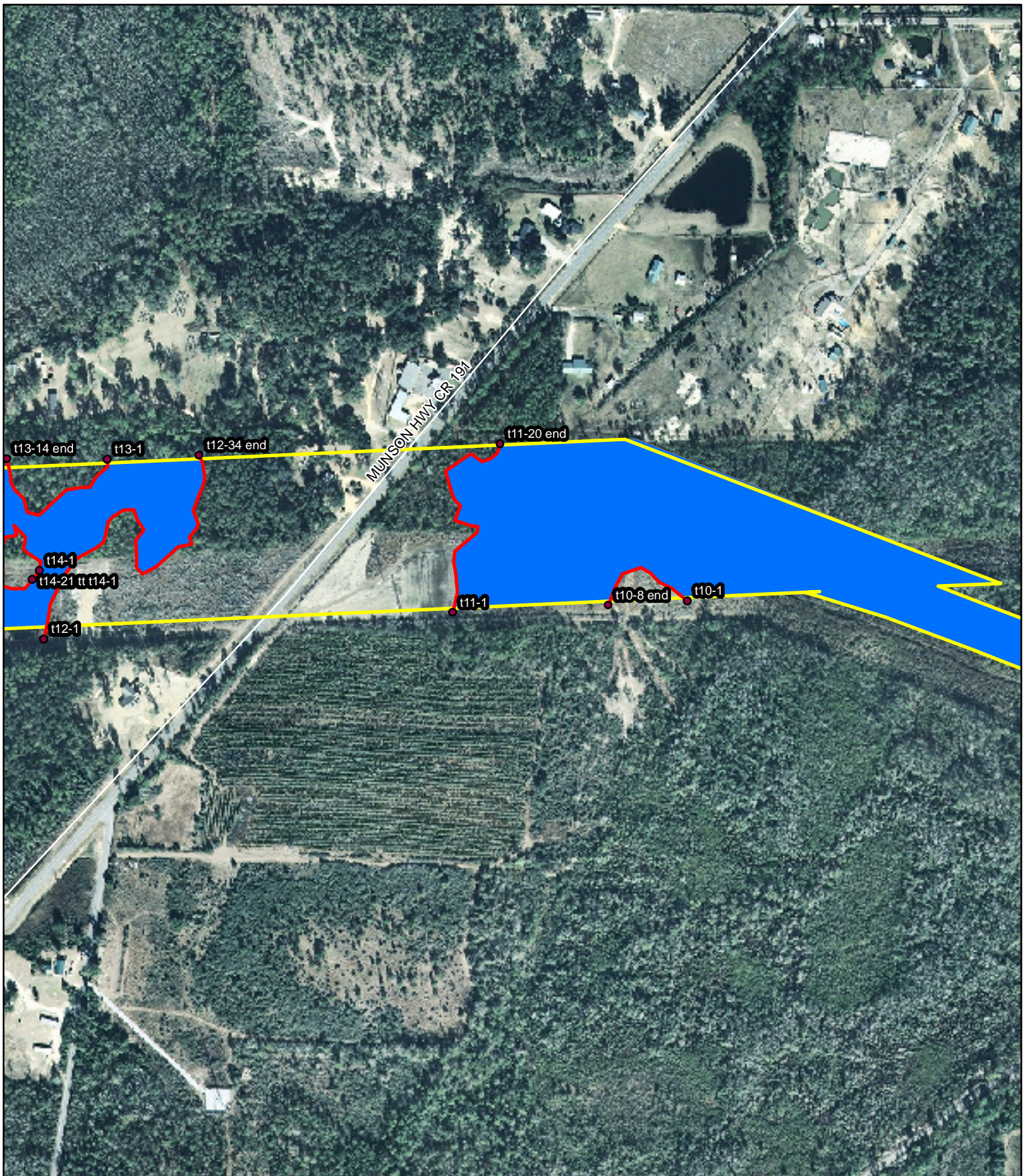
-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands






1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
Feet

Figure 6.5 Wetland Delineation Map 5
SR 87 Connector PD&E



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands





1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
Feet

Figure 6.6 Wetland Delineation Map 6
SR 87 Connector PD&E



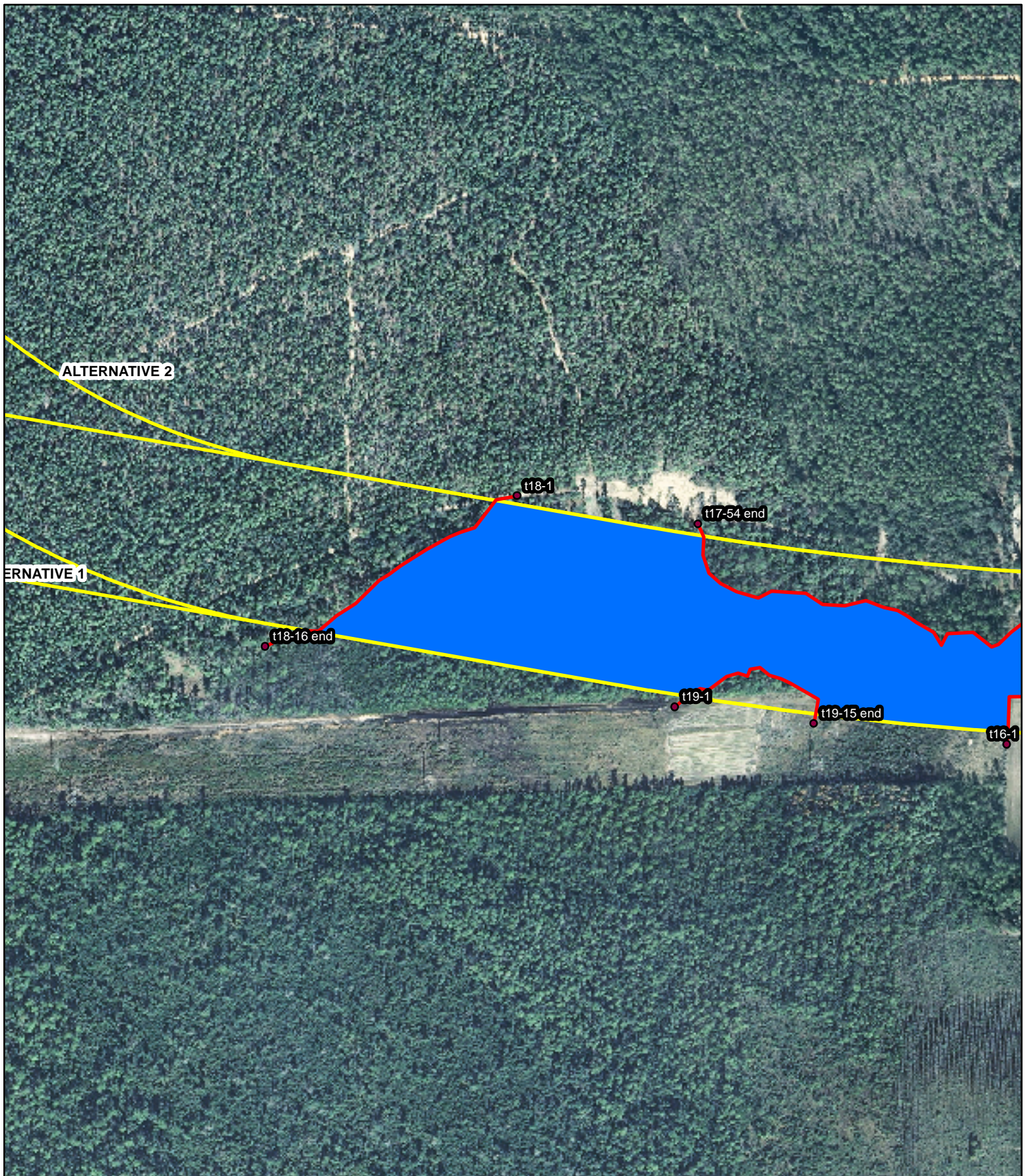
Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands





1:4,800
2010 True Color
Aerial



Figure 6.7 Wetland Delineation Map 7
SR 87 Connector PD&E



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands

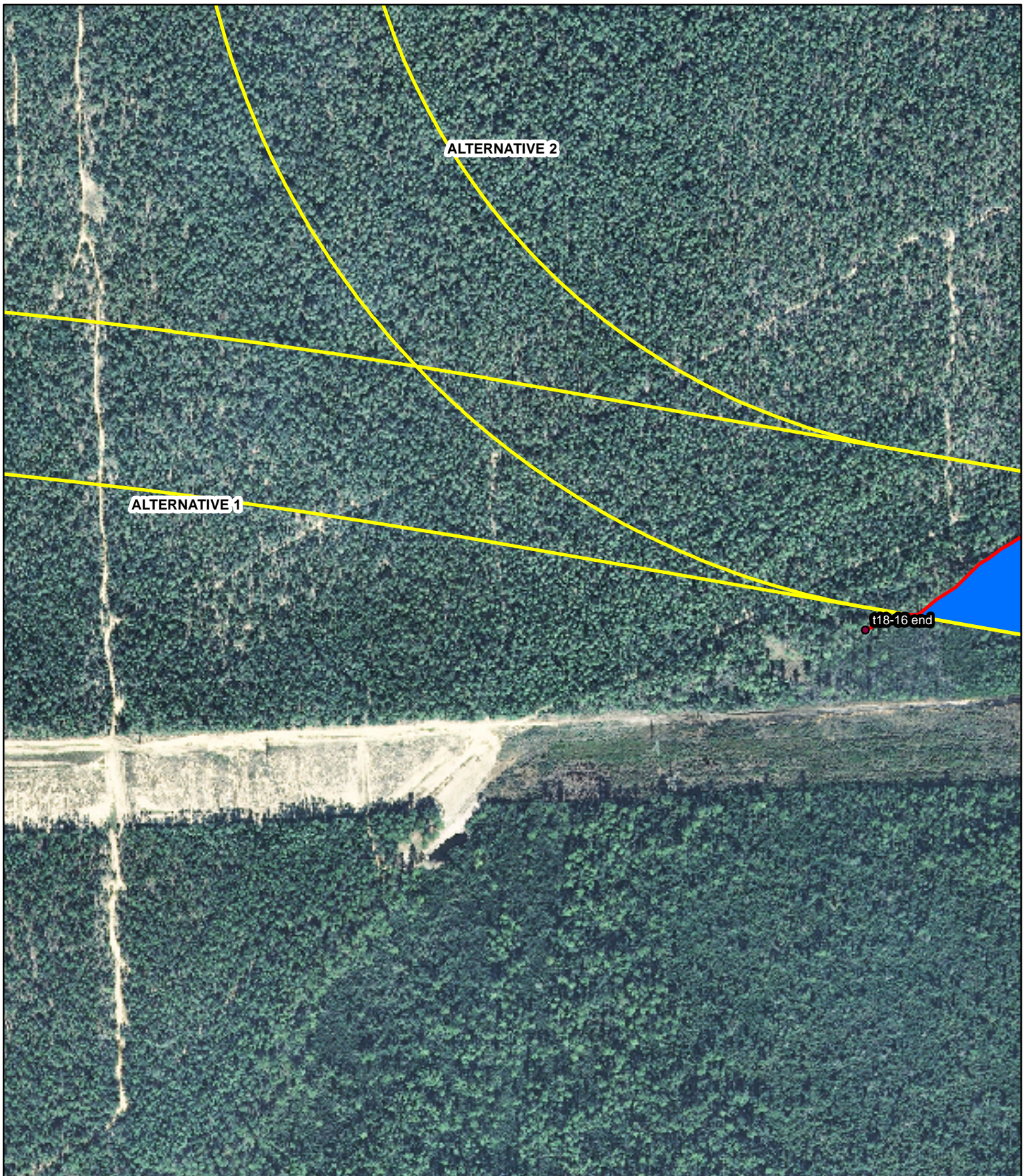
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Feet


1:4,800
2010 True Color
Aerial




Figure 6.8 Wetland Delineation Map 8
SR 87 Connector PD&E

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ERC# 09-143



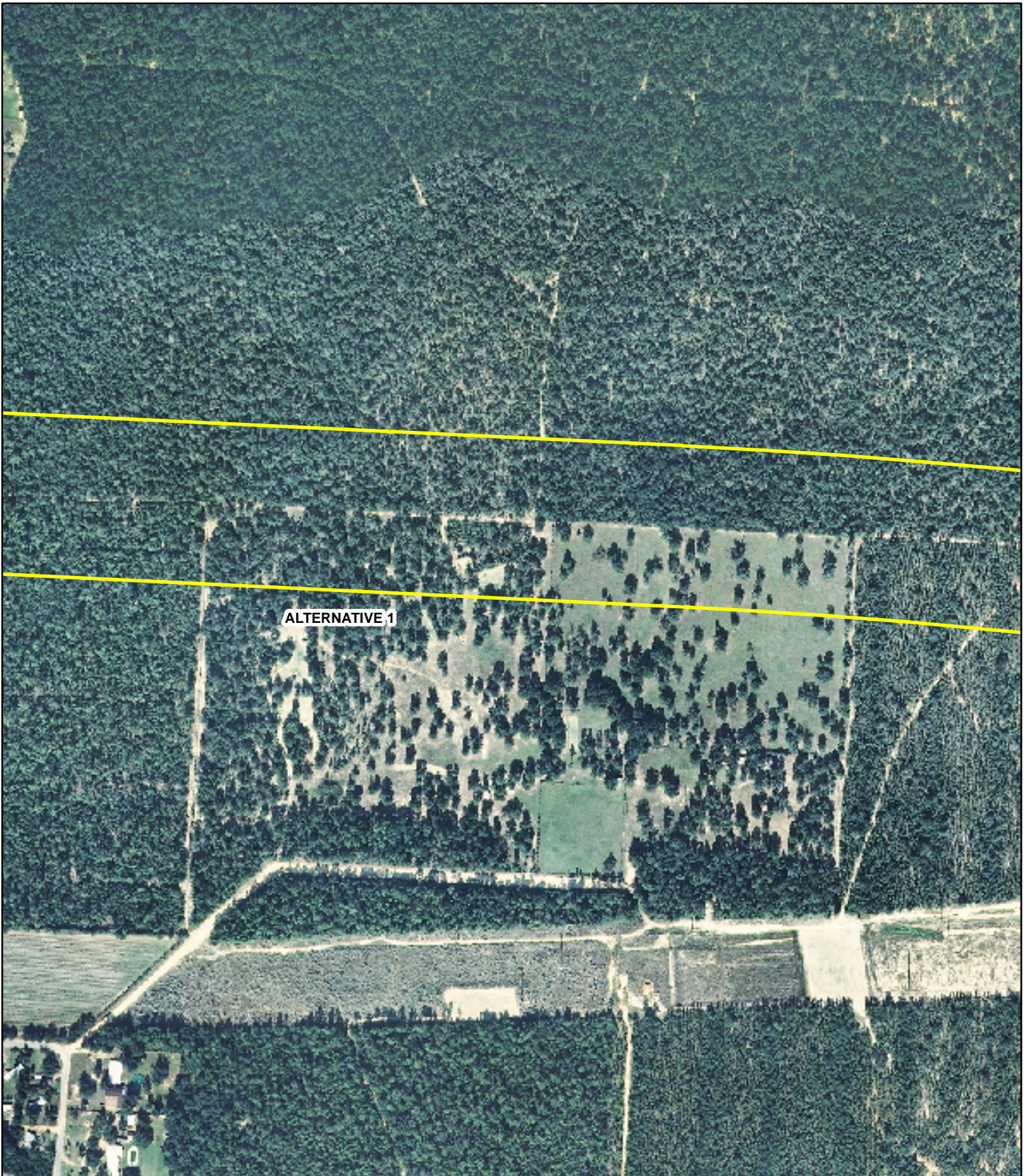
Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands





1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
 Feet

Figure 6.9 Wetland Delineation Map 9
SR 87 Connector PD&E



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands



1:4,800
2010 True Color
Aerial

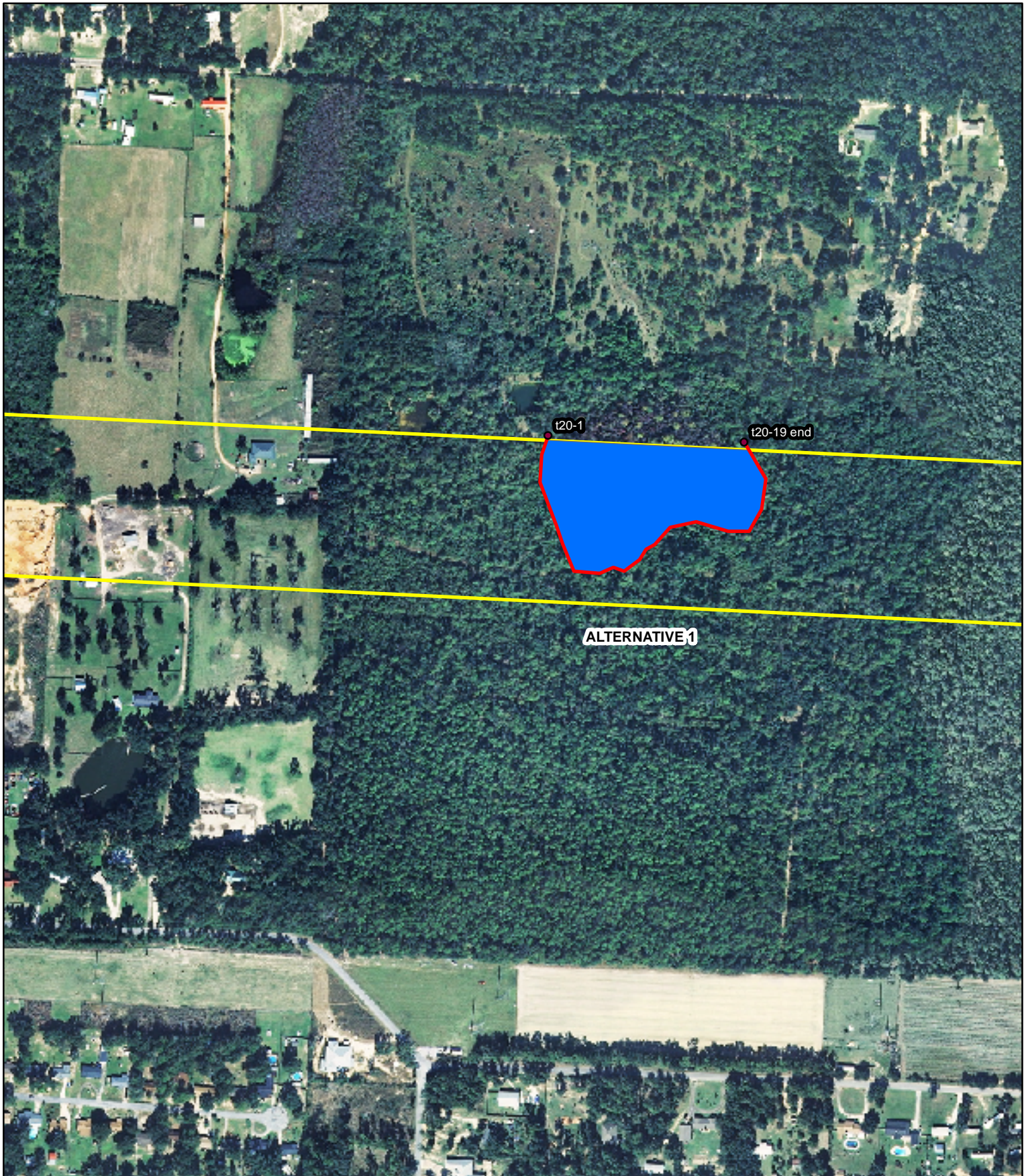
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Feet

Figure 6.10 Wetland Delineation Map 10




SR 87 Connector PD&E

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dv 3.15.12
ERC# 09-143



Legend:

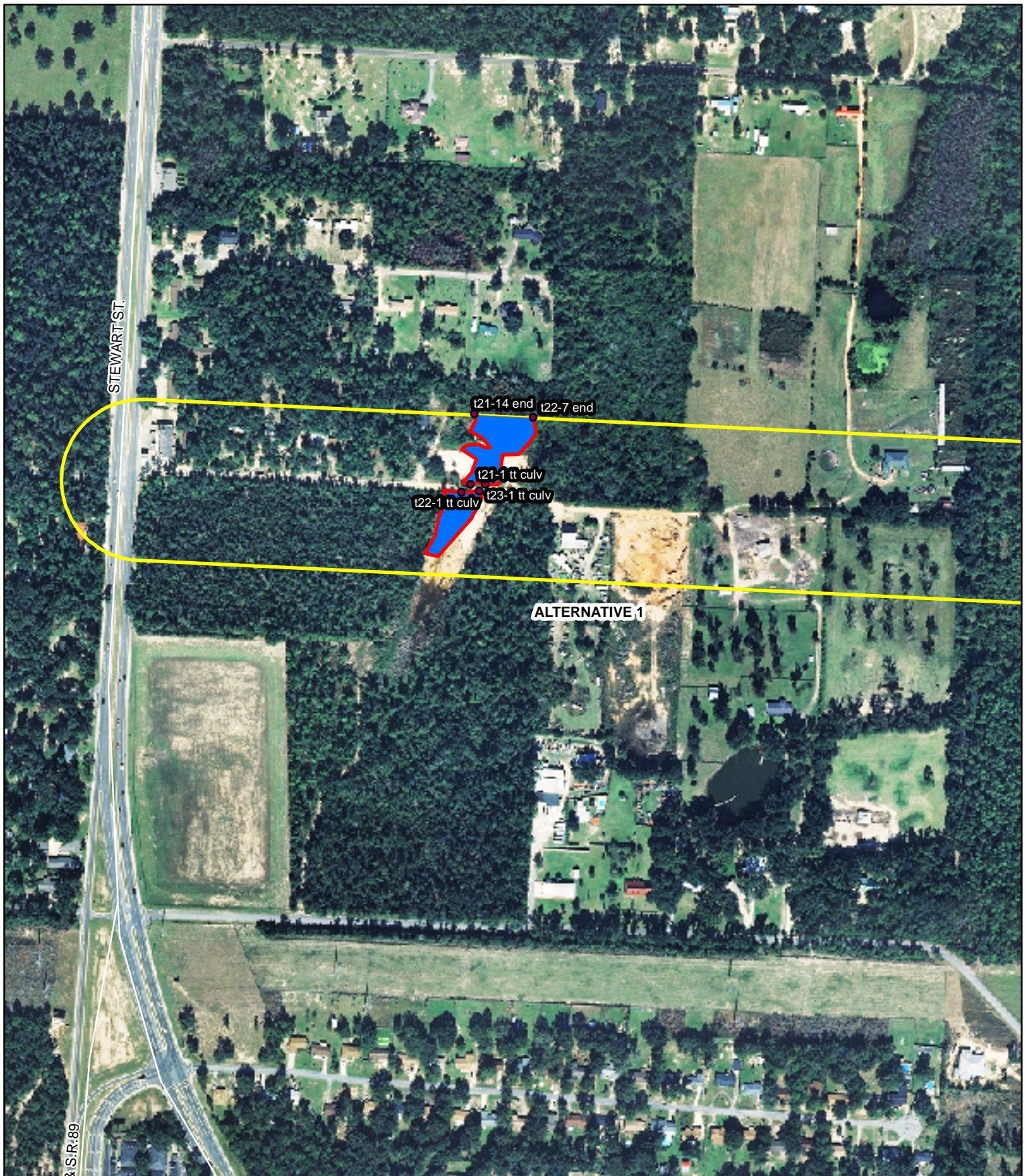
-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands



1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
Feet

Figure 6.11 Wetland Delineation Map 11
SR 87 Connector PD&E



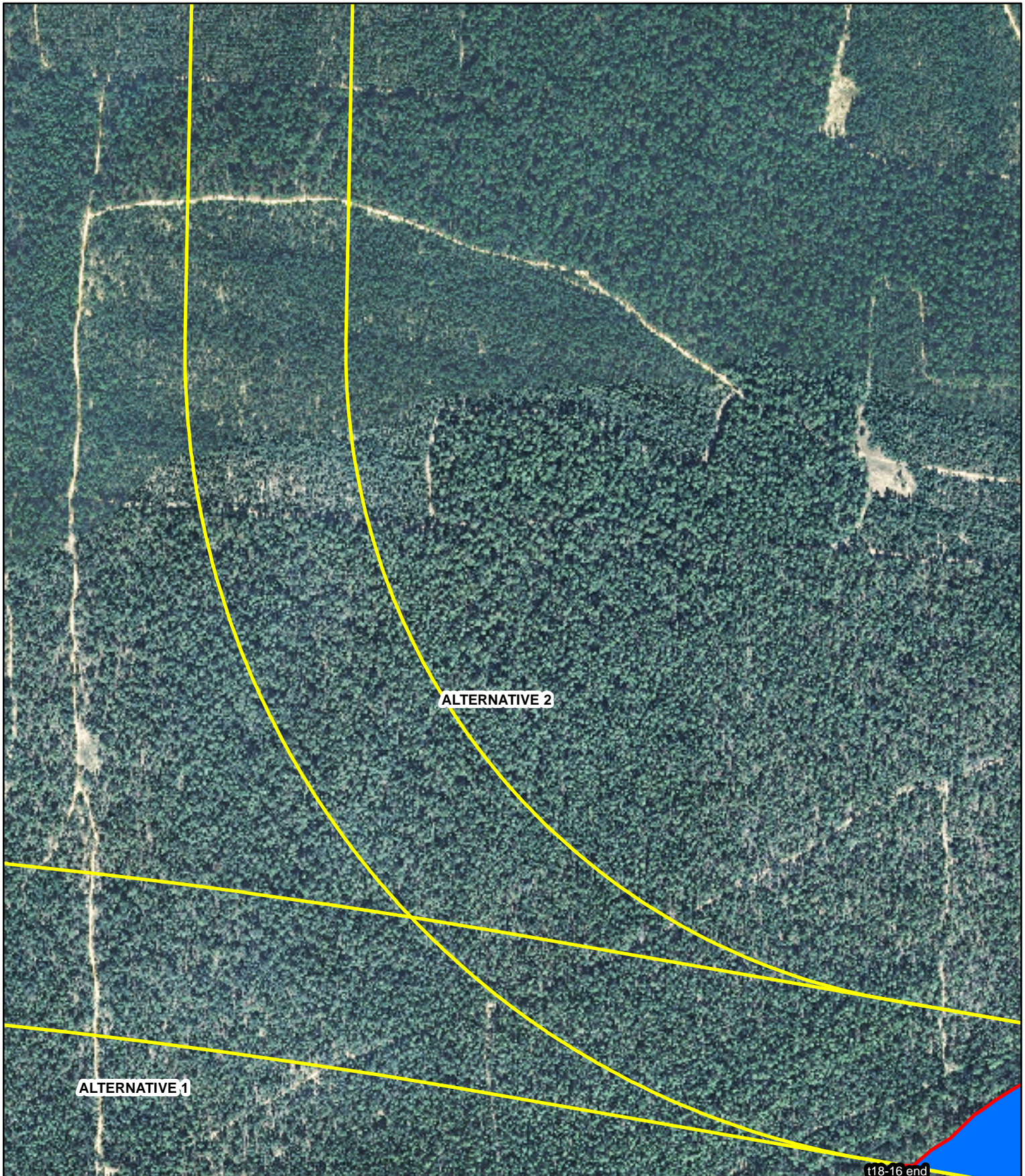
Legend:

- Alignments
- Estimated Wetlands Lines
- ERC Delineated Wetlands




0 200 400 800 1,200
Feet



 1:4,800
 2010 True Color
 Aerial

Figure 6.12 Wetland Delineation Map 12
SR 87 Connector PD&E




Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands



1:4,800
2010 True Color
Aerial

0 200 400 800 1,200



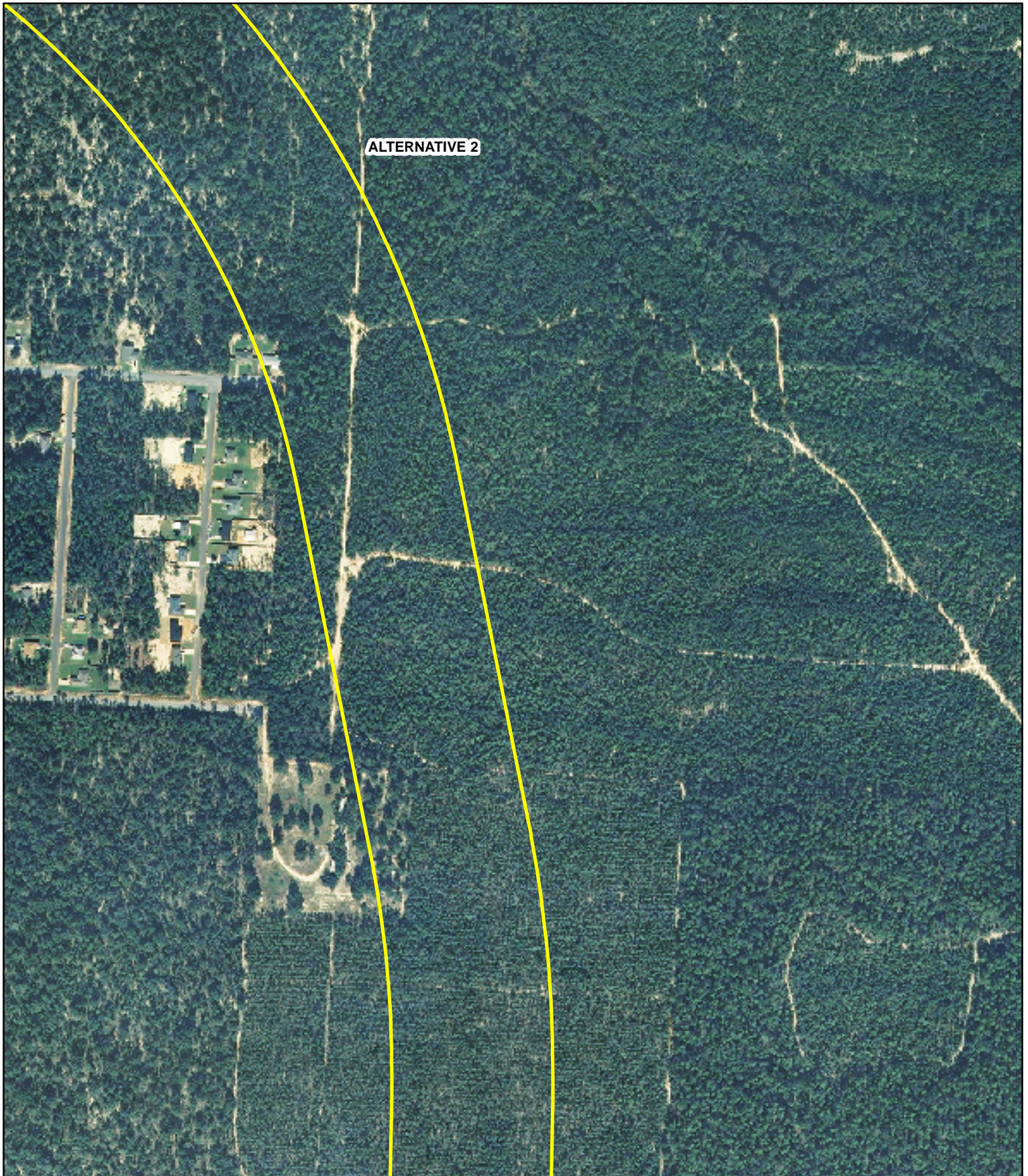
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Figure 6.13 Wetland Delineation Map 13




SR 87 Connector PD&E

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ERC# 09-143



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands

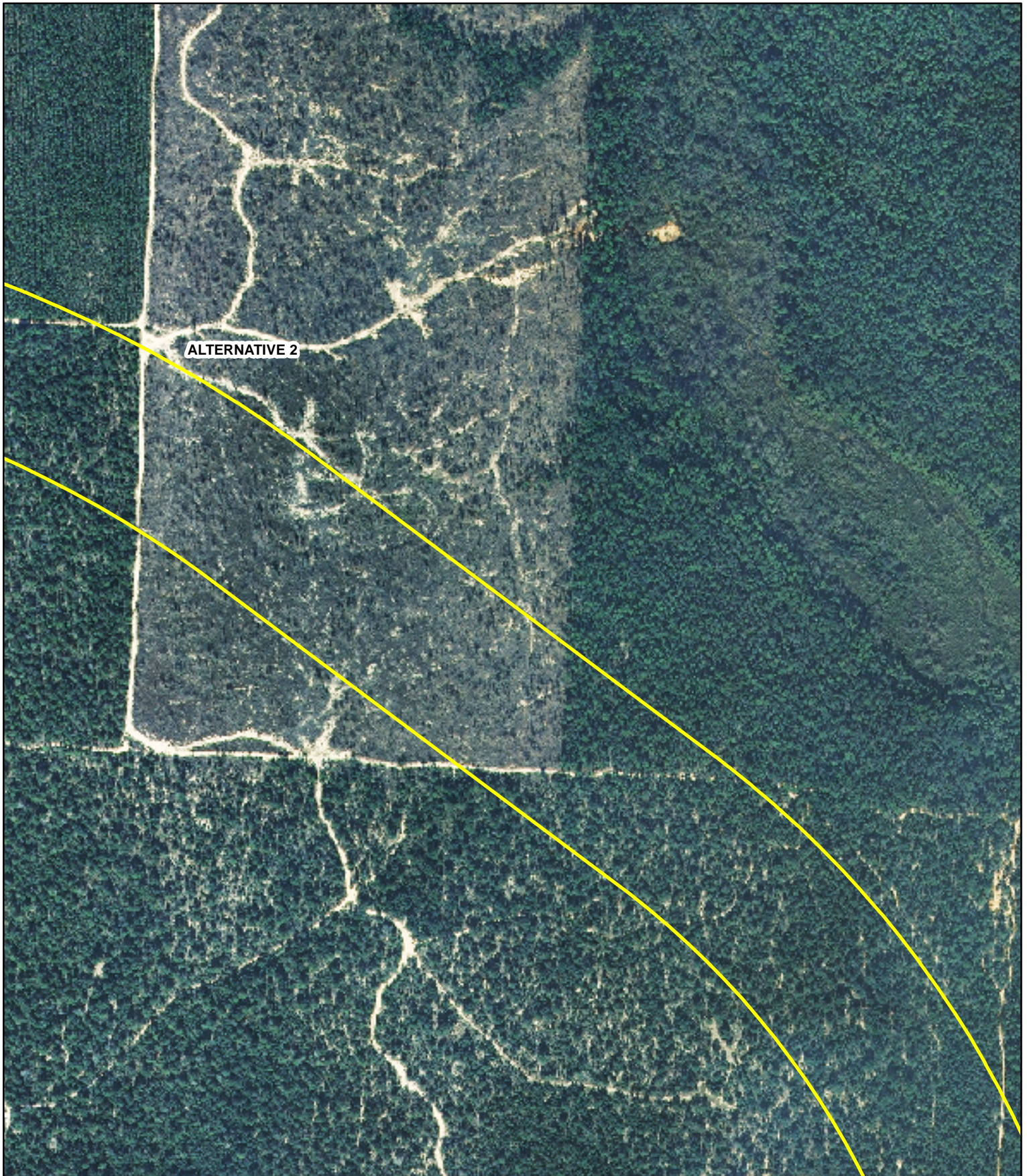

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2010 True Color
Aerial

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Feet




Figure 6.14 Wetland Delineation Map 14
SR 87 Connector PD&E

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ERC# 09-143



Legend:

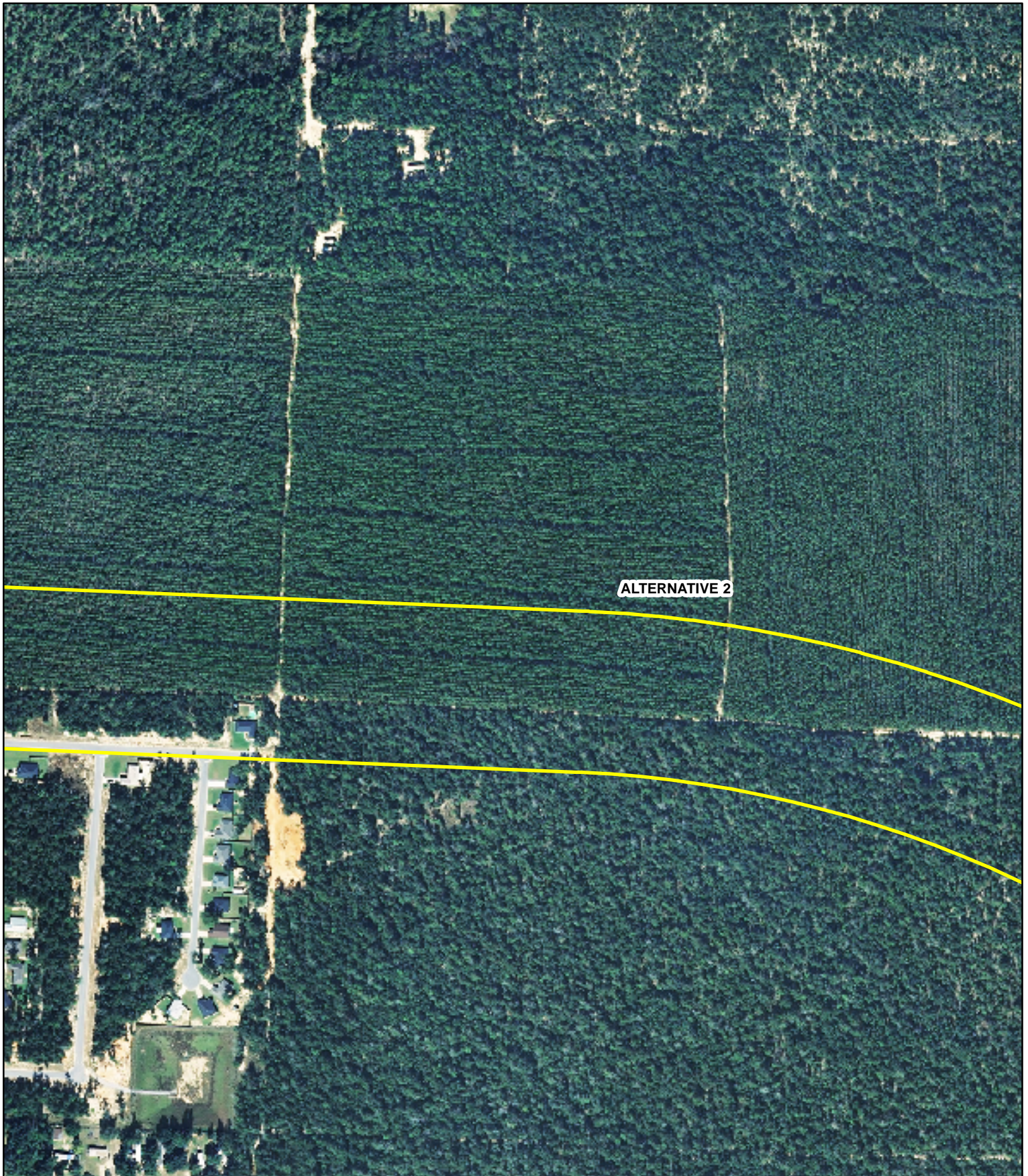
-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands






1:4,800
2010 True Color
Aerial

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Feet

Figure 6.15 Wetland Delineation Map 15
SR 87 Connector PD&E



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands



1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
 Feet

Figure 6.16 Wetland Delineation Map 16
SR 87 Connector PD&E



Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands


1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
Feet




Figure 6.17 Wetland Delineation Map 17
SR 87 Connector PD&E

 Ecological Resource
Consultants, Inc.

dv 3.15.12
ERC# 09-143



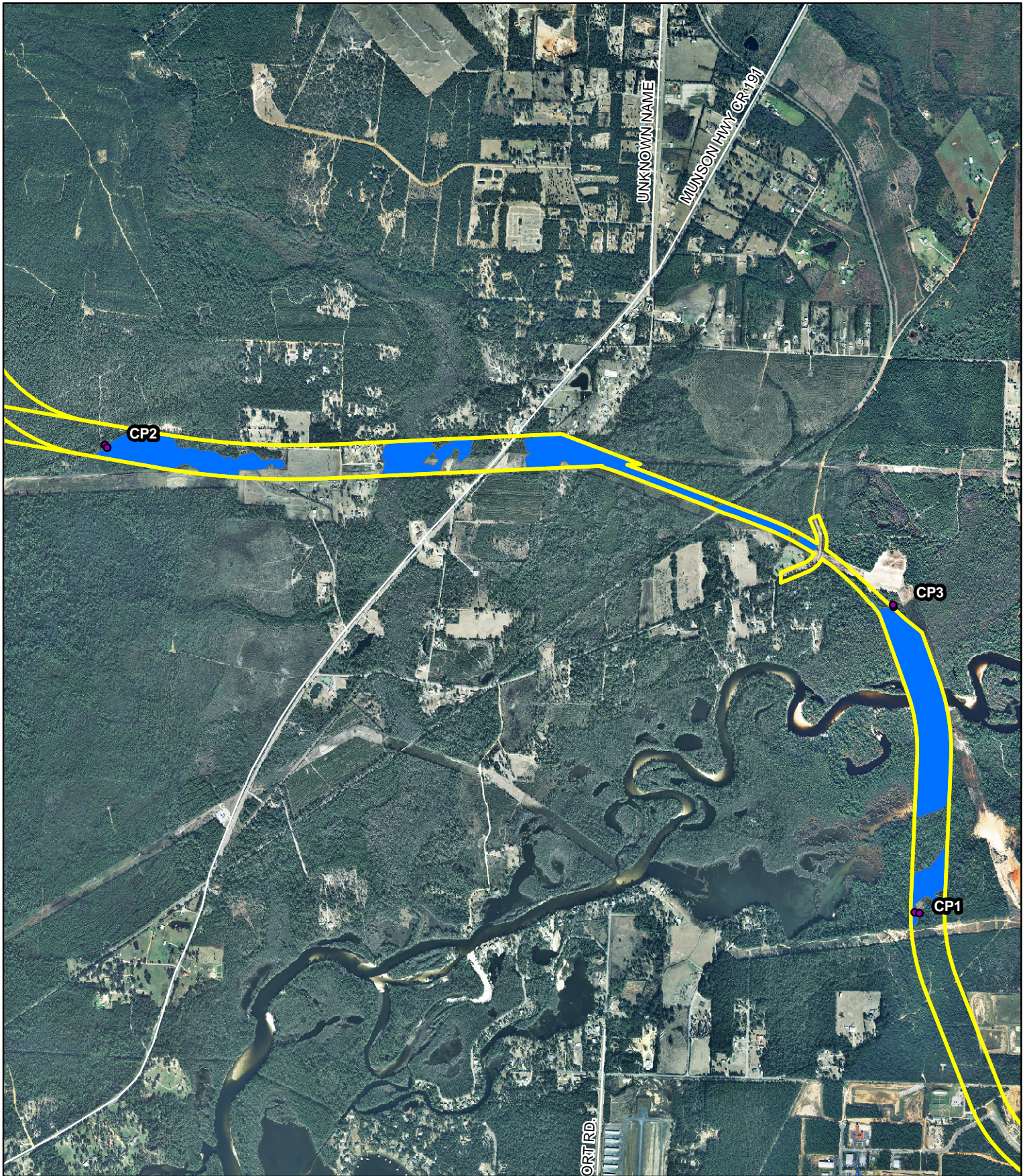
Legend:

-  Alignments
-  Estimated Wetlands Lines
-  ERC Delineated Wetlands


1:4,800
2010 True Color
Aerial

0 200 400 800 1,200
Feet

Figure 6.18 Wetland Delineation Map 18
SR 87 Connector PD&E



Legend:

- Alignments
- ERC Delineated Wetlands
- USACOE Points


1:22,800
2010 True Color
Aerial

0 950 1,900 3,800 5,700
Feet

**Figure 6.19 USACOE Data Sheet
Location Map**

SR 87 Connector PD&E

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ERC# 09-143